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ABSTRACT

Presented are the methodology and results of a 1978-79 study of more than 700 alumni of United States graduate programs in agricultural economics about needs and strategies for improving U.S. education in international agricultural development. Included in this survey were both U.S. students and students from less developed countries (LDC's). Emphasis was upon the educational needs of LDC professionals as perceived in terms of their own careers and in strengthening emerging agricultural economics capabilities in their respective countries. The report covers: (1) background and organization of the study; (2) evaluation of graduate education by LDC professionals; (3) status of agricultural economics in LDC's; (4) U.S. response to LDC professional development needs; and (5) summary, conclusions and recommendations. (Author/WB)

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TRAINING AGRICULTURAL ECONOMISTS for work in INTERNATIONAL DEVELOPMENT

By Darrell F. Fienup and Harold M. Riley

ED204141

SE 035 245

A Report Based on a Study Sponsored by the

American Agricultural

Economics Association

and funded by the

U.S. Agency for International Development

June 1980

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PREFACE

This publication is the second American Agricultural Economics Association (AAEA) report reviewing training for international development work. The purpose of these review activities has been to assess the role of the U.S. universities in providing training for students preparing for careers in international development and to make recommendations for increasing the effectiveness of such training and related professional development activities.

The first report, "International Training in Agricultural Economic Development," was based upon review papers, a survey, and workshop discussions arranged in 1973-74 by the International Committee of the AAEA. (A limited number of copies of this report are available at the Agricultural Development Council offices in New York.)

This second report draws upon information from 1978-79 mail and personal interview surveys of alumni from U.S. university graduate programs in agricultural economics and contacts with their employers in nine selected countries. The U.S. Agency for International Development provided funding support for the study. Substantial additional inputs were provided by members of the International Committee of the AAEA and other professionals who participated in the study in a variety of ways. Departments of Agricultural Economics provided the names and addresses of approximately 2,400 alumni, and some 750 alumni took the time to respond to lengthy mail questionnaires.

Darrell Fienup of Michigan State University served as Project Director. Members of the AAEA International Committee who were most involved in the planning of the study include:

Ralph Cummings, Jr. - Rockefeller Foundation
Roger Fox - University of Arizona
William Merrill - Iowa State University
Kenneth Nobe - Colorado State University
Harold Riley - Michigan State University
Eldon Smith - University of Kentucky
A. M. Weisblat - Agricultural Development Council

Other Committee members who also contributed to the study are:

Earl Brown - AID/BIFAD
Charles Hanrahan - USDA and AID
Phillip Raup - University of Minnesota
Edward Schuh - Purdue University and University of Minnesota

Peter Timmer - Harvard University

Frances VanGigch - World Bank

AAEA members who made major inputs into the study are Russell Stevenson, Agricultural Development Council, and Carlton Infanger, AID project manager.

Most of the country studies depended heavily on the contribution of dedicated U.S. professionals who did not have direct responsibility for the overall study. Their employing institutions also deserve recognition for making the services of these individuals available and for providing important logistic support.

In India, Russell Stevenson of ADC took major responsibility for conducting the study with the able assistance of R. K. Sampath of the Ford Foundation. The Foundation provided important logistic support for the two weeks Stevenson and Sampath traveled through India, and for the week of interviewing conducted by Darrell Fienup in New Delhi.

The Egypt study was initiated by Harold Riley and completed by M. E. "Gene" Quenemoen of Montana State University and James Fitch of the Ford Foundation in Cairo.

Werner Kiene, with the Ford Foundation in Ibadan, conducted the Nigeria study. Tyler Biggs of the Rockefeller Foundation took responsibility for the study in Kenya. John Gerhart, with the Ford Foundation in Nairobi, provided some important insights into the development of the profession in both Kenya and Tanzania.

Roger Fox carried out the study in Brazil. He received logistic support from the Ford Foundation office in Rio de Janeiro. The Colombian study was conducted by Carlton Infanger.

Larry Senger, graduate research assistant at Michigan State University, had major responsibility for the processing of survey data and also prepared a report summarizing the results of the survey of young U.S. professionals.

The support of the AAEA Executive Board was essential to the success of the study. Special appreciation is expressed to the Association's Presidents, R. James Hildreth, B. F. Stanton, and Richard King for their assistance.

Darrell F. Fienup,
Project Director

Harold M. Riley,
Chairman, AAEA International
Committee, 1977-79

June 1980

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CHAPTER 1

BACKGROUND AND ORGANIZATION OF THE STUDY

The American agricultural economics profession has been actively involved in international agricultural development since World War II. During the late 1950s and the 1960s, many university faculty members participated in overseas assignments, and large numbers of foreign students enrolled in U.S. graduate programs in agricultural economics. International activities and supporting infrastructure were generated on many university campuses through support from AID, the major foundations, and other international funding agencies. Many young U.S. professionals moved into teaching and research careers in international development. This period of growth continued through the 1960s.

A substantial change occurred during the 1970s, and this change is the principal motivation for this study. Support for U.S.-based work in international agricultural development has declined substantially at the same time that the demand in less-developed countries (LDC) for U.S. graduate training has continued to increase. Average yearly enrollment of new LDC students in agricultural economics has increased nearly 20 percent in the past four years compared to the previous five.[1] Yet with declining support in U.S. academia, younger American agricultural economists are discouraged from working in the development area. The universities face a serious problem of maintaining competencies in the economics of agricultural development while still trying to serve the needs of LDC students, who constitute over 30 percent of graduate enrollments.

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[1]Russell Stevenson, "Graduate Students from Less Developed Countries: The Continuing Demand for U.S. Training," AJAE 61 (February 1979):104-6; also "U.S. Graduate Students from Less Developed Countries," AJAE 56 (November 1974): 816-18.

Sponsorship for the Study

The training of foreign students has been an area of long-standing concern to the American Agricultural Economics Association (AAEA). The International Committee of the AAEA has arranged special programs on the topic at annual meetings of the Association and, in recent years, has increased its activities because of growing concerns with the training needs of LDC students. There is reason to question U.S. capabilities to adequately serve these needs both on campus and in the developing countries.

In October 1973, the AAEA obtained a grant from the Rockefeller Foundation to conduct a series of three regional seminars with U.S. professional agricultural economists having substantial interest and experience in international agricultural development. The aim was to identify issues and make recommendations to insure more effective training in this area. A related activity involved the preparation and presentation of a program on "Training in International Agricultural Development: The Role of the American Agricultural Economics Profession" at the annual AAEA meeting in August 1974. Agricultural Development Council (ADC) staff were instrumental in arranging for the seminars and in publishing the summary monograph[2] on behalf of the International Committee of the AAEA.

One of the principal recommendations in this monograph to the Executive Board of the AAEA was the necessity to identify more precisely the training needs of LDC students through a direct survey of former graduates. How do they feel about their U.S. education, and what further training is needed at later stages in their professional careers? It was observed that educational policy for training LDC students has been largely based on general impressions and individual testimonials. Hence, the Committee indicated that "There is a great need for information which is more complete, more systematic, and collected with the objective of bearing on some of the principal hypotheses about graduate education for LDC students."

Annual reports of AAEA International Committees since 1974 have generally supported and reinforced the recommendations regarding further study of international training and research needs made in the earlier report. However, only limited action has been taken due to lack of funding and the absence of

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[2] L. P. Schertz, A. R. Stevenson, and A. M. Weisblat, eds., "International Training in Agricultural Economic Development," International Committee of the AAEA, Agricultural Development Council, Inc., 1976.

someone to take leadership in carrying out the necessary study. Consequently, the International Committee agreed at its August 3, 1977, meeting in San Diego to recruit an appropriate individual to conduct the study and to secure the necessary funding.

In early 1978, funds were obtained from the U.S. Agency for International Development (AID) to conduct a major study of LDC and U.S. alumni of U.S. graduate programs in agricultural economics about needs and strategies for improving U.S. training in international agricultural development. Emphasis was given to the training needs of LDC professionals as perceived in terms of their own careers and in strengthening emerging agricultural economics capabilities in their respective countries. The participation of younger U.S. agricultural economists in training LDC students, in research, and in technical assistance was also to be evaluated.

Objectives

Major objectives of the study included the following:

1. Determine what has happened to LDC alumni of U.S. universities in terms of their residence, mobility, and career development
2. Obtain an evaluation of U.S. training in agricultural economics from LDC alumni including their suggestions on how to make it more effective
3. Determine the status of the agricultural economics profession in LDCs and ways the U.S. profession can assist in strengthening indigenous training and research capabilities
4. Assess the extent of involvement, problems, and ways to increase the participation of young U.S. professionals in development work
5. Prepare a revised strategy and set of recommendations for the U.S. training of LDC professional agricultural economists and for ongoing U.S. support for continued development of the profession in the LDCs

For objective one, information was obtained from U.S.-trained LDC professionals on their employment history, job responsibilities, professional contributions, and international migration patterns. This information has helped answer such questions as how many of those trained in the U.S. actually return to and continue to work in their own countries; what is the difference in mobility between M.S.- and Ph.D.-trained people and those who never finish the Ph.D. thesis; do they actually work as professionals, become administrators, or leave

their fields of training entirely? To our knowledge there has never been a comprehensive attempt to determine what has happened to LDC students over a period of years after they leave their U.S. universities.

Evaluation of the training LDC students received in U.S. universities, including an assessment of their current training needs, objective two, is based mainly on responses from former students who received all or part of their graduate training in the United States. Additional information was obtained from employing institutions in the LDCs. This assessment was designed to further test some of the hypotheses and recommendations about training resulting from the 1974 seminars sponsored by the AAEA. Several of the earlier recommendations that were further tested included the following:

1. There is a need to make formal U.S. graduate programs more meaningful for LDC students. The implication is that they need broader training and more experience in application of theory and methods to the problems of their own environments. How do former students feel about the value of their graduate work in the United States?

2. It is generally recommended that LDC students should do their Ph.D. thesis research in their own countries. What are the benefits, the problems, and the trade-offs as seen by LDC students who have been through the process? What are the most productive procedures for data collection, thesis advising, final writing, and thesis defense? This is an important question for the funding agencies that must finance the activity as well as for the direct participants in the process.

3. Greater linkages should be developed between research by LDC graduate students in the United States and action programs in the LDCs. How can the research programs of LDC students be designed to provide a more direct input into national development programs? What are the implications for the qualifications and involvement of U.S. major professors in the process?

4. LDC students should maintain closer professional links with their home countries during their U.S. graduate work, and there should be more follow-up with them by U.S. professors after they return home. Establishment of professional networks within the LDCs and opportunities for continuing relationships with the U.S. agricultural economics profession are needed. However, the specific ways and means by which these linkages may be established (and funded) were not clear. How do LDC professionals feel about these matters?

Objective three is concerned with the level of development of training and research capabilities in the LDCs and in further defining what inputs the U.S. profession can provide to help strengthen these capacities. LDC and U.S. professionals were asked to respond to this question. Again, some of the recommendations made in the 1974 seminars were explored further.

U.S. training institutions should develop more flexibility in adapting to the growing capabilities of LDC universities and in development of nonformal short courses. Joint training programs between U.S. and LDC institutions, sharing thesis research advising responsibilities, postdoctoral work in U.S. institutions, and special courses in new research techniques are some suggestions. What are the training needs of LDC professionals some years after they have received their formal U.S. training?

Small-grants programs have been recommended to fund research by U.S. professionals and their LDC counterparts. More interaction through joint research activities is considered a high priority by many U.S. agricultural economists. Workshops and other opportunities for communication may also be developed. But how does the LDC professional perceive these needs?

The major focus of this study is on the training needs of LDC professionals for work in their home environments, but objective four is concerned with the important related problem of limited research and teaching opportunities for young U.S. agricultural economists with strong interests in development work. Continued professional growth and involvement of this latter group in research and teaching in international agricultural development are essential if U.S. universities are to maintain their capabilities for effective participation in both training LDC students and in research on the critical problems of rural poverty and food production in the less-developed nations. A survey of U.S. professionals was undertaken to ascertain the magnitude of this problem and possible solutions.

The fifth objective of this study has been to integrate the findings from the previous four objectives into an improved international training strategy with specific recommendations for consideration by U.S. universities and international funding agencies. Follow-up seminars and workshops have been held to present the findings of the study and to consider ways of implementing them. It was not intended that this project should end with the presentation of a set of academic conclusions only--but rather that a comprehensive strategy for improved

training and research support be developed and vigorous efforts made for its implementation.

Methods and Procedures

The basic source of primary data and related information for this study comes from LDC alumni of U.S. university graduate programs in agricultural economics. Both mail questionnaires and personal interviews (in selected developing countries) were used to collect the information needed to satisfy objectives one, two, and three. For objective four, a mail survey was conducted of younger U.S. agricultural economists who had a major interest in international agricultural development at the time they completed their Ph.D.s. The questionnaires used for both mail surveys are included in Appendices Q and R.

Lists of LDC alumni with their last known addresses were requested from 58 U.S. Departments of Economics and Agricultural Economics[3] that have trained nearly all LDC students in agricultural economics in this country. Departments were asked to provide information on all LDC students who had received M.S. and/or Ph.D. degrees in the past 15 years (1963 through 1977). Departments were also asked to provide the names of those who spent one year or more in their institutions but did not receive a degree during the same period. Responses were received from 54 departments from which a mailing list of 2,228 LDC alumni was constructed.

Initial mailing of the questionnaires was made in July/August 1978, with a follow-up letter on October 20 to those who had not responded by that date. By the end of 1978, a total of 634 usable questionnaires had been received. There were 325 letters returned unopened with the addresses listed as unknown by the post office. This means that no more than 1,903 LDC alumni (2,228 minus 325) actually received the questionnaire, giving a response rate of 33.3 percent.

In addition to the mail survey of LDC alumni, indepth studies were conducted in nine developing countries.[4] Major employers of agricultural economists including graduate teaching and research centers, ministries of

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[3]This is the group surveyed in 1974 by Russell Stevenson, "U.S. Graduate Students from LDCs."

[4]These countries were Egypt, Kenya, Nigeria, Tanzania, India, Nepal, Brazil, Colombia, and Guatemala.

agriculture, and national planning agencies were personally interviewed to get their views on the usefulness of agricultural economists and the training needs in this field. Leading professionals in each country were also asked to evaluate the strengths and weaknesses of U.S. vs. home-country training and to comment on their countries' needs in developing a more viable agricultural economics profession. Analysis of the data and related information obtained from the in-country interviews and the mail survey were combined to prepare the overall recommendations for improving the effectiveness and relevance of training offered in U.S. graduate schools.

Names and addresses of U.S. professionals with a major interest in development at the time they completed Ph.D.s (1968-77) were requested from 43 U.S. Departments of Economics and Agricultural Economics. Twenty-six departments provided a total of 200 names and addresses. An additional 14 names were obtained from lists of Ph.D. dissertation titles on development topics published in the American Journal of Agricultural Economics over the past ten years. Excluding questionnaires that were undeliverable, an estimated 193 questionnaires were received by U.S. alumni. Of these, 108 questionnaires were returned, giving a response rate of 56 percent.

Representativeness of the Data and Information Obtained

Any study whose data base depends on personal opinions and evaluation is subject to potential problems of bias, and this work is no exception. Bias may be defined as a tendency to produce results that consistently deviate from the true state of affairs. In this study, an attempt was made to get a representative picture of the actual situation as well as to gain more qualitative insights into U.S. graduate training in the economics of international agricultural development and the needs of LDC professionals in their own countries. The mail surveys of LDC and U.S. professionals were designed to be representative of these groups as they were defined. The in-country studies in selected LDCs were undertaken to gain more qualitative insights and as a further check on the findings of the mail survey.

The first potential source of bias is the fact that the mail survey was designed and sent only to LDC professionals who received all or part of their graduate training in the United States. It may be argued that those who received training in the U.S. will tend to defend it and not give an accurate evaluation of their true feelings. At the same time, it is recognized that those who have

actually received U.S. training should be most knowledgeable about its content and effect on their professional lives. All respondents were asked to make critical evaluations to use as a basis for increasing the relevance and usefulness of U.S. training in the future. Also LDC employers of agricultural economists were asked to evaluate the performances of those with U.S. training--giving an additional check on the responses of LDC professionals.

But a further question is how well the responses represent the views of LDC professionals trained in agricultural economics in the United States. A response rate of 33 percent is normally considered good for a mail survey, but the question remains whether the two-thirds not responding were substantially different or held divergent views about their U.S. training. A complete answer would require direct interviews with a random sample of nonrespondents on a worldwide basis. Such a task was beyond the means of this study, but some other checks were made on known characteristics of respondents in relation to the total universe.

To compare geographic origins of foreign students in U.S. agricultural economics programs, responses received in this study were related to an earlier survey of U.S. Departments of Economics and Agricultural Economics by Stevenson about LDC students entering graduate study during 1969-73 (Table 1.1). This provides a general comparison only because the LDC alumni in this survey graduated over a 15-year period between 1963 and 1977, whereas the Stevenson data are for entering students during five years in the middle of that period. The distribution by major world regions is substantially similar for both sets of data. Most are from Asia--43 percent in the AAEA mail survey compared to 40 percent in Stevenson's data. Comparable figures for Latin America are 34 and 32 percent, and for Africa 14 and 15 percent. The major divergence is North Africa and the Middle East, with 9 percent of the respondents from that area in the AAEA survey compared to 14 percent in Stevenson's data. Overall, the comparison of data indicates that the mail survey responses reasonably reflect the proportions of LDC students coming to study agricultural economics in the U.S. from different regions of the world.

Another check was to compare the mailing addresses of respondents and nonrespondents to the mail survey. Addresses provide some indication of residence and type of institution in which LDC alumni are employed. Five categories were identified and are shown in Table 1.2. Of the estimated 1,903

TABLE 1.1 -- REGIONAL DISTRIBUTION OF LDC ALUMNI IN AGRICULTURAL ECONOMICS FROM U.S. UNIVERSITIES

Region	Stevenson Study[a] 1969-73		AAEA Survey[b] 1969-78	
	No.	%	No.	%
Asia	580	39.6	263	43.1
Africa	218	14.9	86	14.1
N. Africa & ME	202[c]	13.8	54	8.9
LAC	463	31.7	207	33.9
TOTAL	1463	100	610	100

[a]This is the sum of entering LDC graduate students in U.S. universities from 1969-73. See Russell Stevenson, "U.S. Graduate Students from Less Developed Countries."

[b]Total number of LDC alumni who responded to the AAEA survey.

[c]Excludes 17 students from Greece, Israel, and Spain.

TABLE 1.2 -- LDC ALUMNI SURVEY RESPONSE RATES BASED ON MAILING ADDRESSES

Address	Answered		Total	
	No.	%	No.	%
All U.S. Addresses	109	17.2	340	17.9
International Institutions	30	4.7	81	4.3
LDC Private Addresses	213	33.6	788	41.4
LDC Universities	152	24.0	385	20.2
LDC Governments	130	20.5	309	16.2
TOTAL	634	100	1903	100

LDC alumni who received questionnaires, 22 percent had U.S. and international institution addresses. Of the 634 survey respondents, the same percent had U.S. and international institution addresses. Those with LDC addresses were divided into three categories--private, university, and government. Substantial numbers of those with private mailing addresses also work in universities or government; but the data indicate these latter two categories are well represented in the responses with 24 and 21 percent of total responses compared to 20 and 16 percent of the total number estimated to have received questionnaires. Again, these data can only give some general indication that the respondents to the mail survey are not substantially different from the nonrespondents in terms of the proportion working in their own countries and in the type of employers they have.

Another comparison was made between respondent and nonrespondent LDC alumni in terms of time of graduation from their U.S. universities. An estimated 57 percent of those who received questionnaires graduated between 1963-73, but only 49 percent of the respondents were in this group. The corresponding figures for those graduating since 1973 are 43 and 51 percent. These data indicate that a higher proportion of more recent graduates responded to the questionnaire, which is not surprising. Even so, the earlier graduates make up nearly half (49 percent) of the respondents so their views are quite adequately represented in the study.

Similar data were developed for the survey of U.S. professionals who had a major interest in development at the time they finished their Ph.D.s. The nonrespondents closely resemble respondents in terms of (1) the proportion of individuals in different categories of employment as indicated by their mailing addresses, (2) present location of employment in the U.S. or overseas, and (3) period in which Ph.D. degree was received (Table 1.3).

Comparisons of the preceding data give some indication that residence, employment, and other characteristics of the respondents and nonrespondents in both surveys are similar. Although it cannot be stated that these groups are random samples from the same population, neither is there any evidence that substantial bias exists. The results of the survey should be judged on their own merits, for they reflect the valid opinions of over 600 LDC and 108 U.S. professionals.

TABLE 1.3 -- RESPONDENTS AND NONRESPONDENTS TO U.S. PROFESSIONAL SURVEY

Type of Address	Total[a]	Percent in Category	Total Respondents	Percent Respondents
Employment Indicator				
U.S. University	80	41.4	48	44.4
U.S. Government	32	16.6	18	16.7
International Agency	19	9.8	11	10.2
Foundation	4	2.1	2	1.9
Foreign Government	4	2.1	3	2.8
Foreign University	3	1.6	1	.9
Private Sector	4	2.1	1	.9
Home Address	47	24.3	24	22.2
TOTAL	193	100	108	100
U.S. vs. Overseas Address				
Domestic	152	78.8	83	76.9
Foreign	41	21.2	25	23.1
TOTAL	193	100	108	100
When Degree Received				
Degree Received Before 1974	124	64.2	64	59.3
Degree Received 1974-78	69	35.8	44	40.7
TOTAL	193	100	108	100

[a]Total mailed minus those returned because of incorrect addresses.

Basic Characteristics of the LDC Survey Population

The mail survey of LDC professionals provides the primary source of data used for the analysis carried out in this study. As such, it is important to give some information on several basic characteristics of the survey group including their origins, education, dates degrees were received, sources of financial support, and commitment to return to their own countries. Some of these characteristics are also used as variables to help analyze differences in responses to the set of questions asked in the mail questionnaire.

Responses were received from foreign alumni in 79 countries, of which 67 may be classified as LDCs. These included 24 in Latin America and the Caribbean (LAC), 17 in Asia, 14 in Africa, and 12 countries from North Africa and the Middle East (NAME). Responses also came from alumni in 12 countries not usually classified as LDCs but where agricultural economics is in general less developed than in the U.S. The majority of these alumni were from Japan, Israel, and several countries of Southern Europe.

The average age of all respondents in the LDC survey was 37.7 years. Ph.D.s averaged 40.5 years, and those with M.S. degrees were 35.4 years old on the average. Agricultural economists in the U.S. professional survey averaged 39.5 years of age. U.S. professionals and their LDC counterparts were in similar age categories.

The total number of respondents was 653, of whom 610 or 93 percent came from LDCs. Forty-three percent of LDC responses were from Asians, 34 percent from Latin Americans, 14 percent from Africans, and the remaining 9 percent from North Africa and the Middle East. This is an average response of approximately 9 per country, but these range from a low of 1 response from each of 10 countries to a high of 53 from India. Fifteen LDCs with more-established agricultural economics professions[5] had an average of 25 responses per country compared to less than 6 each from the remaining 42 LDC countries. This reflects the relative numbers of agricultural economists who have received U.S. training in the respective countries. The above figures relate to the national

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[5]LDCs with more-developed agricultural economics professions (MDAE) were identified as having at least one established M.S. training program and, in some cases, Ph.D. work. Countries included are India, South Korea, Malaysia, Taiwan, Thailand, Philippines, Egypt, Nigeria, Kenya, Tanzania, South Africa, Brazil, Chile, Colombia, and Mexico.

origin of LDC alumni and not to their current residence and employment, which will be discussed later.

Another important classification was the degree status of the LDC alumni surveyed. Three categories were used, including those with M.S. degrees only, those who have started work for the Ph.D. but have not completed it for various reasons (designated as ABDs), and those with completed Ph.D.s. The distribution of the total sample of 610 LDC respondents included 41 percent M.S., 16 percent ABD, and 43 percent Ph.D. On a regional basis, Africa and LAC had the highest proportion of M.S. respondents (44 and 47 percent) compared to 35 and 39 percent for Asia and the Middle East. The opposite situation holds for Ph.D.s. Fifty-one percent of the Asian respondents had Ph.D.s compared to 36 and 35 percent for Africa and LAC. These data reflect the greater maturity and more-established agricultural economics professions in Asia compared to most LAC countries and especially to Africa.

Approximately 16 percent of the respondents have a second M.S., which was obtained in the U.S. in over 90 percent of the cases. Seventy-two percent obtained their first M.S. (and in most cases their only M.S.) in the U.S. As expected, 96 percent of the Ph.D.s were granted by U.S. universities. Approximately half of all respondents (52 percent) received their last degrees within the past five years (1974-79), and the rest graduated between 1963-73.

The major sources of financial support during U.S. graduate study vary substantially between M.S. and Ph.D. study. The U.S. government and home governments or universities were the principal sources (45 percent) for M.S. study compared to 30 percent for the Ph.D. For Ph.D. study, U.S. universities and U.S. foundations provided most support (53 percent) compared to 29 percent for M.S. study. Private funds or loans were considerably more important for M.S. study (16 percent) as compared to Ph.D. study (11 percent). These results as well as a comparison with Stevenson's findings are shown in Table 1.4.

Approximately two-thirds of the respondents had formal commitments to return to their own countries when they completed U.S. graduate study. Fifty-seven percent of these commitments were with the home-country governments and 28 percent with the sponsoring LDC university. Africans and Middle Easterners made a somewhat higher-than-average (73 and 76 percent) commitment to return to work after completing their U.S. studies.

TABLE 1.4 -- SOURCES OF FINANCIAL SUPPORT DURING U.S. GRADUATE STUDY

Source of Funds for U.S. Study	Percent of Financial Support Received AAEA Survey[a]			Percent of Students Who Received Support from Each Source Stevenson Surveys[b]		
	M.S. Study	Ph.D. Study	Average	1969-1974	1974-1977	Average
	(1)	(2)	(1)+(2)			
Home Govt. or Univ.	19.4	17.0	18.2	13.2	22	17.6
Private Funds or Loan	16.4	11.0	13.7	19.1	26	22.6
U.S. Govt. Agencies	25.2	13.0	19.1	23.9	19	21.5
U.S. Foundations and Nonprofit Organ.	15.3	23.0	19.2	16.4	12	14.2
U.S. Universities	14.1	30.3	22.2	22.9	17	20.0
Inter-Govt. Agencies	2.4	1.5	2.0	2.9	4	3.5
Other	6.9	6.0	6.5	1.3	-	.7

[a]These figures are an average of the percentage of support each survey respondent reported on the mail questionnaire. There were 380 responses for M.S. study and 273 for Ph.D. study.

[b]These figures represent the responses of U.S. Departments of Economics and Agricultural Economics that indicated the principal source of financial support for each LDC student entering during the time period shown.

Residence, Mobility, and Employment Patterns

Nearly 82 percent of LDC alumni of U.S. graduate programs in agricultural economics are still living and working in their native regions (see Table 1.5). This indicates the overall "brain drain" is not nearly as severe among trained agricultural economists as it is reputed to be overall among foreign students. Substantial differences do exist, however, between regions and especially among countries. Asia has lost more U.S.-trained professionals in total and as a percentage of those trained in the U.S. than have all other regions of the world combined.

TABLE 1.5 -- ORIGIN, CITIZENSHIP, AND ESTABLISHED RESIDENCE OF LDC PROFESSIONALS IN SURVEY[a]

Region	Origin (No.)	Citizen (No.)	Established Residence (No.)	Citizen / Origin (%)	Residence / Origin (%)
Asia	247	216	181	87.4	73.3
Africa	79	78	67	98.7	84.8
LAC	198	194	178	98.0	89.9
N. Africa & ME	50	46	43	92.0	86.0
TOTAL	574	534	469	93.0	81.7

[a]Excludes LDC students enrolled and actively working on their Ph.D.s in the U.S. and not regularly employed in the U.S.

Only 73 percent of Asians trained in the U.S. are still living in that region. Survey results indicate India, South Korea, and Taiwan have retained 55, 60, and 62 percent of their U.S.-trained agricultural economists. However, 92 percent of those trained from Malaysia and Thailand are still in their own countries. This variation among countries in Asia is apparently greater than between Asia and other regions.

Some countries in other regions have also lost substantial numbers of their trained U.S. professionals, but at least in Latin America most have remained in the region. For example, only 7 of the 19 Argentines included in the survey are still living in Argentina, but most of the 12 outside the country are living and

working in the LAC region. Overall, 90 percent of those from LAC are still in the region. It is also noted that 85 percent of the Africans surveyed are still in Africa. In general, fewer agricultural economists from Africa have been trained than from other regions. Over 98 percent of the African and LAC respondents have retained their native citizenship compared to 87 percent of the Asians.

Another indication of employment mobility is provided by data collected on the first employer the student has after his completion of U.S. training and on his current employer. Table 1.6 indicates 82 percent of LDC professionals are currently employed by LDC institutions. Overall, LDC governments and universities each employ 35 percent of the total, and 12 percent have private employment in their own countries. When compared with students' first employers, LDC governments lost the most professionals, LDC universities gained slightly, and the private sector remained about the same. International agencies were the major employers of those employed outside their own regions. They also were responsible for the biggest employment shift--from 4 percent of LDC alumni who worked for international agencies in their first job to 9 percent of current employment.

TABLE 1.6 -- FIRST AND CURRENT EMPLOYERS OF LDC ALUMNI

Employer	First Employer		Current Employer	
	No.	%	No.	%
LDC Govt.	243	40.4	209	35.0
LDC Univ.	196	32.6	210	35.2
Private Sector	66	11.0	71	11.9
TOTAL LDC	505	84.0	490	82.1
International Agency	26	4.3	56	9.4
U.S. or other DC Govt. or Edn.	17	2.8	15	2.5
U.S. or other DC Univ.	53	8.8	35	5.9
TOTAL DC	96	16.0	106	17.8
GRAND TOTAL	601	100	596	100

As expected, those with Ph.D.s are considerably more mobile and less likely to stay in their own countries than professionals trained at the M.S. level. Seventy-five percent of all Ph.D.s in the survey are still working in their own regions compared to 92 percent of those with M.S. degrees (see Table 1.7). International agencies employ 13 percent of the Ph.D.s but only 4 percent of those with M.S. degrees. The other major foreign employers of Ph.D.s from LDCs are U.S. and other developed-country universities.

TABLE 1.7 -- CURRENT EMPLOYERS OF LDC ALUMNI BY DEGREE STATUS

Employer	Current Job: M.S. Only No.	M.S. Only %	ABD No.	ABD %	Ph.D. No.	Ph.D. %
LDC Govt.	126	50.0	25	37.9	58	21.0
LDC Univ.	58	23.0	22	33.3	130	47.0
Private Sector	48	19.0	4	6.0	19	6.9
TOTAL LDC	232	91.7	51	77.3	207	74.7
International Agency	11	4.3	8	12.1	37	13.3
U.S. or other DC Govt. or Fdn.	6	2.3	1	1.5	8	2.9
U.S. or other DC Univ.	4	1.6	6	9.0	25	9.0
TOTAL DC	21	8.3	15	22.7	70	25.3
GRAND TOTAL	253	100	66	100	277	100

Most of the Ph.D.s who remain in their own countries are employed by local universities (47 percent), whereas those with M.S. degrees are employed mainly by LDC government agencies. A larger percentage of those with M.S. degrees also work in the private sector. The employment pattern of ABDs is similar to that of Ph.D.s, although more ABDs are in LDC government and fewer in LDC universities. This may be partly explained by the fact that less

importance is attached to a completed Ph.D. in most LDC government positions and that there is less opportunity to do the necessary research to complete the degree.

An additional measure of employment patterns is the type of position held and/or job history of each survey respondent. This information was requested for (a) before U.S. graduate study, (b) first job after U.S. training, and (c) current job or occupation. The results are shown in Table 1.8. One of the most significant findings is the increasing employment of U.S.-trained LDC professionals in administrative and managerial roles. In most cases, these positions require supervision of research, planning, project development, and academic programs. U.S. training is usually considered useful in developing a broader perspective of economic relationships and processes. However, with nearly a third of the respondents holding administrative positions, serious questions about the need for more training in public administration and management must be raised. In any event, the evidence is clear that professionals trained in the U.S. move into positions of responsibility.

TABLE 1.8 -- OCCUPATION BEFORE U.S. GRADUATE STUDY, FIRST, AND CURRENT OCCUPATION

Occupation	Job Before U.S. Grad. Studies		First Occupation		Current Occupation	
	No.	%	No.	%	No.	%
Student/Grad. Asst.	196	31.0	41	6.9	27	4.5
Univ. Teaching/Research	111	17.5	207	34.7	191	32.1
Govt. Professional	156	24.7	175	29.4	148	24.8
Administration/Mgmt. (Govt., Univ., Private)	106	16.8	124	20.8	190	31.9
Consultant/Private and Other Employment	63	10.0	49	8.2	40	6.7
TOTAL	632	100	596	100	596	100

Another important observation is that the great majority of professionals are doing jobs for which they were trained. Even though the institutionalization

of agricultural economics as a profession has been difficult in some countries and regions, there is apparently a strong demand for the services of agricultural economists in universities, planning agencies, ministries of agriculture, and other public institutions. These are the places where most of them are employed. Employment in the private sector appears to be fairly constant at 10 to 12 percent of all those trained in the U.S.

The actual positions that LDC alumni hold currently coincide reasonably well with what they indicated their goals were when they were studying in U.S. graduate schools. The major divergence is the high proportion in administration (32 percent) compared to less than 4 percent who indicated this area as their first employment goal. Nearly two-thirds of those with Ph.D.s indicated their first choice of employment was as a university professor compared to only 17 percent for those with Master's degrees. The largest market for Ph.D.s in LDCs is for graduate teaching and research in universities. Thirty-two percent of those with M.S. degrees indicated agricultural planning and project development as their first employment choice. Another 16 percent wanted work as government researchers. Some 50 percent are actually working in government. These differences in employment and employment goals of M.S. and Ph.D. alumni need to be considered in planning training programs.

CHAPTER 2

EVALUATION OF U.S. GRADUATE TRAINING IN AGRICULTURAL ECONOMICS BY LDC PROFESSIONALS

The essential ingredients of U.S. graduate training in agricultural economics include completion of a set of formal academic courses as well as experience in research through development of a thesis or research paper. Most programs have minimum course requirements in economic theory, statistics and analytical techniques, and in the basic subject areas of agricultural economics. The thesis research is intended to utilize the theory and methods in a problem-solving activity. The M.S. and Ph.D. degrees have similar objectives, the Ph.D. having greater depth and breadth and more emphasis on developing research capabilities.

A major objective of this study is to evaluate the usefulness of U.S. training for LDC professionals. How do they evaluate their course work and thesis research experience? What would they change if they were to repeat the process? Was there adequate guidance in course selection and thesis research? What about problems with English and recommendations to help overcome these deficiencies when they exist? Answers to these questions are important for U.S. universities that continue to enroll large numbers of LDC students and for those agencies and organizations which fund their education. LDC alumni who have received this training are most qualified to answer these questions and help provide guidance for the training of their future colleagues.

Usefulness of Courses Taken

All LDC respondents to the mail survey were asked to evaluate the formal courses they had taken in U.S. graduate schools. Fourteen areas in which all agricultural economists normally study were listed on the questionnaire, and each respondent was asked to indicate the number of courses taken in each area and to rank them as extremely useful, very useful, moderately useful, slightly useful, or a waste of time. These courses included areas such as micro- and

macroeconomic theory, statistics and econometrics, production economics, marketing, and policymaking. Space was also provided to add courses not included on the list.

Alumni taking courses in the different areas ranged from 97 percent in statistics and econometrics to only 29 percent in comparative economic systems. More than 50 percent took courses in 11 of the 14 listed areas. Over 75 percent of the respondents had taken courses in micro- and macroeconomic theory, statistics and econometrics, linear programming and operations research, economics of agricultural development, and in production economics (see Table 2.1).

Courses in economic theory and quantitative methods were considered most valuable by the alumni surveyed. The top three areas were microeconomics, statistics and econometrics, and production economics. Eighty-five percent of those taking microeconomic theory considered those courses either extremely useful or very useful; 81 percent considered statistics useful, and 78 percent considered production economics useful.

Next in order of importance were courses in macroeconomic theory, economics of agricultural development, mathematics, agricultural marketing, and linear programming and operations research. Between 66 and 71 percent of the LDC alumni taking these courses ranked them as extremely useful or very useful. These figures indicate that the basic courses normally taken by U.S. agricultural economists are also considered very important by professionals from developing countries. When over two-thirds evaluate these courses as extremely or very useful, it certainly indicates a high degree of satisfaction. The message here is that the main strength of the U.S. system of training is in requiring a comprehensive set of formal courses that provide the framework and analytical tools for effective problem solving.

Courses that received lower ranking (those ranked by 28 to 61 percent extremely and very useful) were in general courses with more institutional content. Included were agricultural policy, trade and trade policy, land and resource economics, agribusiness, history of economic thought, and comparative economic systems. It should not be assumed that the subject matter of these courses is necessarily less useful for LDCs but rather that the courses are highly oriented to U.S. and developed-country situations. It is hypothesized that these rankings would change significantly if the courses were made more relevant to LDC situations.

TABLE 2.1 -- USEFULNESS OF COURSES TAKEN IN U.S. GRADUATE SCHOOLS AS RANKED BY LDC ALUMNI WHO TOOK COURSES IN THE AREAS INDICATED

Course Area	Alumni Who Took Courses		Extremely Useful (A)		Very Useful (B)		Moderately Useful (C)		(A+B)	(A+B+C)
	No.	%	No.	%	No.	%	No.	%	%	%
Micro Theory	626	96	300	47.9	233	37.2	72	11.5	85.1	96.6
Macro Theory	615	94	210	34.1	227	36.9	131	21.3	71.0	92.3
Stat. & Econometrics	635	97	275	43.3	237	37.3	101	15.9	80.6	96.5
LP and Op. Research	494	76	148	30.0	176	35.6	111	22.5	65.6	88.1
Mathematics	468	72	124	26.5	203	43.4	100	21.4	69.9	91.3
Ag. and Ec. Develop.	534	82	177	33.1	195	36.5	106	19.9	69.6	89.5
Ag. Policy	451	69	128	28.4	129	28.6	119	26.4	57.0	83.4
Trade & Trade Policy	346	53	69	19.9	118	34.1	102	29.5	54.0	83.5
Ag. Marketing	470	72	146	31.1	165	35.1	109	23.2	66.2	89.5
Prodn. Econ.	533	82	211	39.6	206	38.6	80	15.0	78.2	93.2
Land & Res. Econ.	393	60	94	23.9	147	37.4	96	24.4	61.3	85.7
Agribusiness	234	36	55	23.5	74	31.6	56	23.9	55.1	79.0
History of Ec. Thought	277	42	21	7.6	57	20.6	91	32.9	28.2	61.1
Comp. Ec. Systems	192	29	18	9.4	55	28.6	56	29.2	38.0	67.2
Other Courses	237	36	87	36.7	84	35.4	46	19.4	72.1	91.5

Thirty-six percent of LDC respondents listed and ranked other courses they had taken in U.S. graduate schools. These tended to be highly useful courses for the individuals concerned and covered a wide range of subject matter. As shown in Table 2.1, over 70 percent ranked these courses as extremely useful or very useful. These courses and their weighted-average ratings are shown in Appendix A. Among this set of courses, applied agricultural economics courses in areas of farm management, finance, prices, cooperatives, and agricultural extension received highest ratings. Research methodology and computer science courses were listed as the next most useful. Business and public administration courses were also listed as highly useful. Courses considered only moderately useful were in general agriculture, rural sociology, and general economics including monetary theory and welfare economics. Care must be taken in interpretation since small numbers are involved in many of these responses. There is an indication, however, that practical courses that improve operational skills are most valued.

An alternative procedure to rank the usefulness of courses was also used in which each of the five possible responses for each selected course area was given a weight--from 1 for "extremely useful" to 5 for "waste of time." Results obtained from LDC students are compared to U.S. professionals' ranking of courses as shown in Table 2.2.

Note that the weighted-average ranking of courses by LDC professionals is essentially the same as that obtained from using the sum of those ranking courses extremely useful and very useful. There are basic similarities between LDC and U.S. professionals' evaluations but also some interesting differences. For example, both give top ranking to micro theory, statistics and econometrics, and production economics. Courses with more institutional content receive lower ratings by both but are more important for U.S. professionals, especially land and resource economics, agricultural policy, and international trade. Most striking is the low rating given macroeconomics by U.S. professionals (thirteenth) compared to fourth by LDC respondents. Mathematics is also ranked lower by U.S. professionals. Both groups were not satisfied with their courses in comparative economic systems and the history of economic thought.

Statistical tests to determine whether there were significant differences in average evaluations among course areas are presented in Appendix B. The T-test used indicates several groupings of courses in terms of their usefulness, which basically corresponds to the results presented above. Agricultural development,

TABLE 2.2 -- RANKING OF LDC AND U.S. PROFESSIONALS' RESPONSES TO THE USEFULNESS OF U.S. GRADUATE COURSES IN AGRICULTURAL ECONOMICS

Course Area	LDC Professionals		U.S. Professionals	
	Score[a]	Rank	Score[a]	Rank
Micro Theory	1.700	1	2.010	3
Stat. & Econometrics	1.785	2	2.196	4
Prodn. Econ.	1.873	3	1.976	2
Macro Theory	2.020	4	2.792	13
Ag. and Ec. Develop.	2.074	5	1.907	1
Ag. Marketing	2.098	6	2.582	9
Mathematics	2.121	7	2.730	11
LP and Op. Research	2.136	8	2.493	8
Agribusiness	2.212	9	2.625	10
Land & Res. Econ.	2.270	10	2.222	5
Ag. Policy	2.315	11	2.481	7
Trade & Trade Policy	2.388	12	2.394	6
Comp. Ec. Systems	2.725	13	2.760	12
History of Ec. Thought	3.039	14	3.148	14

[a]Weighted average of the degree of usefulness indicated by all respondents who took courses in each indicated area. Score from 1.0 to 2.0 is extremely useful to very useful; 2.01 to 3.0 very useful to moderately useful; 3.01 to 4.0 moderately useful to slightly useful.

production economics, micro theory, and statistics and econometrics were given top ranking by U.S. professionals. Statistically, no ranking is possible within the group. For LDC professionals, micro theory and statistics and econometrics were in the top grouping. Next in importance came production economics and macro theory, followed by agricultural development, marketing, LP and operations research, and mathematics. The importance of micro- or firm-level economics and statistical techniques is clearly indicated by responses from both groups.

A further attempt to assess course usefulness was undertaken by looking at differences in evaluations based on (a) geographic origin of respondents,

(b) degree status, (c) when their last degree was received, and (d) current employer. These results are presented in Appendix C.

Africans generally gave higher ratings to all courses, and Latin Americans assigned scores lower than the overall averages. Asians tended to be closer to the mean of responses. The general ordering of usefulness was similar for all regions, but Africans did show some tendency to rank institutional courses higher and quantitative methods lower. More consistent differences are noted between respondents with only M.S. degrees compared to those with Ph.D.s.

TABLE 2.3 -- COURSE RANKING BY DEGREE STATUS OF LDC RESPONDENTS

Courses	Percent Who Ranked Courses Extremely Useful or Very Useful	
	M.S.	Ph.D.
Theory and Methods		
Microeconomics	78	90
Econometrics and Statistics	76	82
Production Economics	76	79
Macroeconomics	67	75
Mathematics	65	73
LP and Op. Research	60	67
Average	70	78
Institutional		
Economics of Ag. Development	72	70
Marketing	72	60
Land and Resource Economics	63	59
Agricultural Policy	63	55
Agribusiness	63	49
Trade and Trade Policy	58	51
Average	65	57

Ph.D.s consistently evaluated theory and methods courses higher (8 percentage points on the average) than did those with the M.S. only. The opposite is true for institutional courses, which M.S. professionals evaluated 8 percentage points higher than Ph.D.s. In general, the level of importance of theory and methods in training does not change substantially between the two groups, but

Ph.D.s gave institutional courses much less importance (over 20 percentage points less). The exceptions are comparative economic systems and history of economic thought, which Ph.D.s ranked 7 and 9 percentage points higher, respectively, than did those with only the M.S. This variation can be partly explained by the need for a broader frame of reference at the Ph.D. level of training. Even so, only 43 and 31 percent of the Ph.D.s responding ranked these areas as extremely useful or very useful, respectively.

Evaluation of courses did not differ greatly related to the time respondents received their last academic degrees. For this test, the sample of respondents was divided into two groups--those who had graduated within the past five years and those who had received their degrees more than five years previously. Both groups gave the same high evaluation to the economic theory courses. Recent graduates were somewhat more favorable to quantitative methods courses, and earlier graduates ranked institutional courses slightly higher. There is some indication that LDC professionals who have been working longer tend to value all their training somewhat more highly than more recent graduates.

Another comparison of responses was made on the basis of current employment. Major categories included LDC employment in universities, in government, and in the private sector. These three groups included 82 percent of the respondents. Other employment categories considered were international agencies, developed-country (DC) governments, and DC universities. Those employed by LDC and DC universities consistently gave the highest ranking to courses in micro- and macroeconomic theory, statistics and econometrics, LP and operations research, mathematics, and agricultural policy. There was a tendency for respondents employed by LDC governments to give higher rankings to institutional courses than other groups. Those in private employment gave lowest ranking for all courses except trade and agribusiness, which they ranked highest of all groups.

Even though relative differences exist, all groups considered economic theory and quantitative methods as the most important part of their graduate training. These findings are not too surprising. Economic theory and analytical methods are the tools an agricultural economist must have to perform effectively in that role. The results confirm that these tools are just as essential to LDC professionals as they are to those working in developed countries. There are, however, differences in how these concepts are applied as well as additional knowledge and skills needed in LDCs. There are also indications that some

differences in the content and emphasis of courses taken may be needed, depending on the level of training and type of job to be performed.

Additional Courses LDC Alumni Wish They Had Taken

In the mail questionnaire, LDC alumni were asked the question "What additional courses or areas of study (if any) do you now wish you had emphasized in your U.S. graduate work?" These results are summarized in Appendix D.

Overall, most responses concerning which additional courses LDC alumni would like to have had included those on quantitative methods. Over 30 percent of the responses indicated a desire for more statistics, econometrics, and computer programming courses. This finding is interesting because more alumni took courses in quantitative techniques than any other area. Does this suggest perhaps that statistics and econometrics are such highly technical areas that more than the required number of courses are needed in order to gain an adequate background? It could also be that courses in these areas are too theoretical, and, once on the job, economists have too little understanding of how to apply the highly theoretical statistical and econometric principles they learned. Another important consideration is the dearth of reliable statistical data in most LDCs for use in the sophisticated models these former students were trained to use. Frequent mention of a desire to have taken "practical" and "applied" courses suggests that the latter two observations may often be the case.

Next in importance was the set of traditional agricultural economics courses, which included 23 percent of the total responses. Within this group, marketing and agribusiness comprised 10 percent of the total. These responses represented 15 percent of the responses from M.S. holders versus 6 percent from Ph.D.s. For the total group of agricultural economics courses, this area represented 29 percent of M.S. responses compared to 19 percent of Ph.D.s. This variation is consistent with the evaluation of courses taken, in which M.S. degree holders gave more importance to traditional agricultural economics courses.

Micro- and macroeconomic theory courses were emphasized in only 7 percent of the responses. This lack of response is interesting in that economic theory was considered among the most useful areas for students when they were in graduate school, but apparently most felt they received sufficient course work

in that area. In contrast, quantitative methods (also ranked very high) was noted as an area in which LDC alumni would have liked even more courses.

Two areas of work not usually emphasized in graduate school in which respondents would have liked more training were agricultural sector analysis, planning, and policy analysis (12 percent) and project development and evaluation (7 percent). The latter area can also be considered part of agricultural planning and policy analysis. These needs were expressed almost equally by M.S. and Ph.D. respondents. Demand for the last set of courses listed in these areas probably derives from the fact that most LDCs are still engaged in development programs that emphasize the project approach to development. But successful agricultural development programs require skills in project and sector analysis as well as a general knowledge of agricultural development, hence the expressed desire for more training in these areas. Another indication of the LDCs' commitment to projects as the primary instrument for enhancing rural development is the relatively infrequent mention of a wish for greater familiarity with topics such as income distribution and welfare economics, i.e., fields that explore the viability of income redistribution as a method of increasing incomes of the rural poor.

The other areas often discussed but in which LDC students usually do not get much (if any) training are management and public administration. Ten percent of the responses were in this area. In the study sample, approximately 30 percent hold administrative positions in addition to or as part of their other professional obligations. Given these responses, it would appear that public administration and management courses are not included often enough in agricultural economics degree programs.

A desire to have course work in other areas such as international trade, trade policy, and research methodology was expressed less frequently by respondents. This response may be more a function of the demands of a respondent's current job, whereas the desire for more familiarity with planning, management, and administration more likely stems from possible weaknesses of agricultural economics programs in general. Some alumni stated that they would like to have had additional training in a given area because the U.S. agricultural economics department in which they received their training was weak in that particular area. But once again, such responses do not necessarily indicate general deficiencies in U.S. agricultural economics programs.

In summary, respondents seemed to indicate a rather pervasive need for more familiarity with (1) practical statistical and econometrics methods, (2) computer programming, (3) agricultural sector analysis and project planning, and (4) management and public administration courses. Other less frequently mentioned lacks in agricultural economics programs are most likely due to the fact that a respondent could not always specialize in the exact fields that he would later find to be helpful in his particular job. Finally, the general absence of a perceived need for additional knowledge in such fields as welfare economics, comparative economic systems, and income distribution may stem from the project approach to development of most LDCs, an approach that has generally stressed efficiency and not equity as its decision criterion.

Following are some typical or insightful comments to the question about what additional courses or areas respondents would like to have emphasized more in their graduate programs.

> I think that along with the theoretical training there should be more practical training: accounting, and international economics from the practical point of view (not necessarily the businessman's point of view--perhaps from the Foreign Trade Minister's point of view), including some knowledge of how the main commodity and financial markets work. But the theory should not be sacrificed at all. Hence, the programs need to be longer. As it is, universities rush one through, in a mass production of M.S. and Ph.D.s. (Government Researcher, Dominican Republic)

> I think I took the right courses given: (a) time constraints, (b) personal preferences, (c) rules of the department, and (d) quality of available staff in the department. If I had had more time, I would like to have taken a Resource Economics course because this is important for a country like Brazil. (University Professor, Southern Brazil)

> Natural Resource Economics, Integrated Economic Development, and Linear Programming. Natural resources are misused for lack of economic sense. The interrelation of activities calls for an integrated approach and LP is a useful analytical tool in both cases. (Administrator and Professional, Sudan Government)

> Quantitative Analysis, Sector Analysis through a systems approach, time series, econometric applications, and Computer Science. The reason is that through my experiences in Brazil we need to be equipped with more global knowledge of problems of agriculture in Brazil. (Researcher in Federal Government, Brazil)

> Mathematics, Econometrics, Operations Research, Sampling Theory, and Farm Management. I found out that they are indispensible for comprehending and solving agricultural economic problems. (Deputy Minister of Planning, Syria)

Stochastic Models, Ag. Decision Analysis, Project Evaluation, and Finance. Most jobs ask for professionals with knowledge in Project Evaluation. (University Professor, Chile)

Forecasting Methods, Econometrics, and Marketing courses. Because they are very important tools for an economist and I didn't have time to get them. (Administrative Director of National Agricultural Research Agency, Colombia)

Econometrics and Linear and Dynamic Programming. It would facilitate my applied work at times. (OAS Specialist in Project Evaluation, Argentina)

More Agricultural Development courses with special emphasis on problems in LDCs in general because the courses in Agricultural Development were very DC oriented and the attention on LDCs was on a theoretical basis only. (Ministry of Agriculture Administrator, Sri Lanka)

Economic Dependence, Marxian Economics Sociology, Political Science, and Agronomy. To balance approaches to social problems. (University Professor, Northeast Brazil)

Comparative Economic Systems and/or Industrial Organization. Why? To get a broad perspective on agricultural problems and their role in general economic and social problems. (Ph.D. candidate working on thesis in South Korea)

Agribusiness management and general management concept. Generally, an objective of graduate study in Agricultural Economics in the U.S. aims at preparing students for the public sector and colleges. It should put more emphasis on the need of business firms. (Manager of Agricultural Development Bank, Thailand)

Investment Analysis, Finance, Public Administration, and Public Institution Management--because generally one ends up administering and learns by trial and error. (Administrator at IICA, San Jose, Costa Rica)

Political Economy and Agricultural Administration. Agriculture is not only a technical process but a political and social phenomenon. (University Professor, Venezuela)

Value of M.S. Thesis Research

An attempt was made to evaluate the importance of an M.S. thesis in graduate training by asking respondents who wrote a thesis to compare its usefulness to formal course work and then to explain why they responded as they did. Results are shown in Table 2.4.

TABLE 2.4 -- COMPARISON OF NUMBER OF STUDENTS AND THEIR EVALUATION OF USEFULNESS OF THESIS WRITING

	Total Sample No.	Total Sample %	M.S. Only %	ABD %	Ph.D. %
Wrote M.S. Thesis	324	64	80	60	53
No M.S. Thesis	179	36	20	40	47
TOTAL	503	100	100	100	100
M.S. Thesis More Useful Than Classes	135	46	45	49	46
M.S. Thesis Equal to Classes	131	44	43	42	46
M.S. Thesis Less Useful Than Classes	30	10	12	9	9
TOTAL	296	100	100	100	100

Most LDC students wrote M.S. theses, but the number varied substantially by degree status. Approximately two-thirds of the total sample indicated having written an M.S. thesis, including 80 percent of those who held M.S. degrees only and 53 percent of the group with Ph.D.s. Approximately 90 percent of the total sample considered the M.S. thesis more useful (46 percent) or just as useful (44 percent) as classwork. There does not appear to be any significant difference in the responses obtained from those with M.S. degrees only and those with Ph.D.s. Only 10 percent felt their thesis experience was less useful than course work.

The principal reason given (42 percent of responses) for the importance of a thesis was that it was a good training experience in what it takes to be a good researcher; that is, it provided practice in logical thinking, organization, analysis, and writing. Next in importance (23 percent) was the observation that the thesis provided an opportunity to put the tools acquired in course work to practical use. Other related reasons for positive evaluations included an opportunity to test what was learned, importance for LDCs, work with good professor, interest in topic, and ability to specialize in a specific area or problem.

For the 10 percent with negative responses to writing an M.S. thesis, most felt it was not relevant for their jobs or that course work was better. Also

mentioned was that the M.S. thesis was not important for Ph.D.s and that it was a waste of time. The great majority of evidence from LDC alumni, however, is that the M.S. thesis should be retained as an integral part of the requirements for that degree, especially for LDC students for whom the M.S. is often a terminal degree.

Value of Ph.D. Thesis Experience

The importance of the thesis requirement for the Ph.D. was not questioned. However, there has been considerable discussion about the best topics and procedures for LDC students to use in their Ph.D. thesis research. In this study, those respondents who had completed a Ph.D. thesis (278 respondents) were asked to describe how their own theses were conducted, the advantages and disadvantages of that procedure, and then to state what they considered an optimum arrangement for an LDC student conducting Ph.D. thesis research. Table 2.5 indicates the methods actually used to write theses by Ph.D.s in the sample and what they considered to be an optimum procedure.

TABLE 2.5 -- EVALUATION OF PH.D. THESIS PROCEDURES BY LDC ALUMNI

Classification	Home Problem Home Research %	Home Problem U.S. Research %	U.S. Problem U.S. Research %	Other Arrangements %
All Ph.D.s				
Procedure Used	33	30	32	5
Optimum	15	51	8	27
Asia				
Procedure Used	26	38	33	4
Optimum	17	49	6	29
Africa				
Procedure Used	72	7	14	7
Optimum	17	59	3	21
LAC				
Procedure Used	47	29	17	7
Optimum	16	48	15	21

The survey data show that methods of thesis completion are about equally divided between (1) doing the research at home on an LDC problem, (2) dealing with an LDC problem and data but doing a substantial amount of the analysis and writing at the U.S. university from which the degree will be given, and (3) doing the thesis on a U.S. or non-LDC problem at the U.S. university. Clearly, the optimum arrangement chosen by all Ph.D.s was to work on an LDC problem but to do a substantial amount of the analysis and writing in the U.S.

A very large proportion of Africans (72 percent) returned to their own countries to conduct their Ph.D. thesis research. Nearly half of the Latin Americans also followed this procedure. On the other hand, Asians most often did their theses in the U.S. on a U.S. problem, which suggests that they may have had less opportunity to do research on Asian problems. LDC professionals from all geographic regions definitely preferred to work on problems relevant to their own countries but to have the support of their U.S. institutions while conducting the in-country research.

The major advantages given for working on a home-country problem with much of the research conducted in the U.S. were, first, to really understand a home-country problem, and next, to be in close contact with the major professor and guidance committee, references, and computing facilities. This approach was also expected to save time and money. The major disadvantage cited was the lack of accurate data and/or problems in data collection when addressing an LDC problem.

The major advantage given for doing the entire thesis in the home country was to gain familiarity and experience with local problems and institutions. A related benefit was to learn the conditions under which research must be conducted at home. Another reason was that data were considered to be more available. A major problem was lack of time for thesis research when LDC alumni return and resume full responsibilities in their home institutions. A second important problem was the lack of guidance from the major professor and thesis committee when the student is far removed from his U.S. university.

Advantages of doing a U.S. problem thesis in the U.S. were that data are more available as are guidance, references, and computer facilities. Such research also saves time and money. The main disadvantage was that such a thesis is not useful at home. Other reasons were that a topic is too narrow and that there is limited time to continue living in the U.S. These results are summarized in Appendix E.

Overall, there is clearly a preference to work on LDC problems--and to do a major part of the research in the U.S. if it can be financed. The latter is clearly a problem for funding agencies as well as for the home-country governments, which have the most to gain from having nationals do theses on their own countries' problems.

Some other differences should be noted in how LDC professionals carried out their Ph.D. thesis research in first- and second-ranked U.S. universities.[1] In the latter group, 43 percent of the theses were conducted in the U.S. on U.S. problems compared to 26 percent in first-ranked universities. This may reflect more funds available for home-country research in first-ranked U.S. universities. Conversely, 39 percent of the students in this category worked on home-country problems at home compared to 22 percent in second-ranked U.S. universities. Altogether, 69 percent of LDC students attending first-ranked U.S. universities worked on home-country problems compared to 52 percent from second-ranked universities.

Adequacy of Guidance in U.S. Graduate Schools

Three-fourths of the LDC alumni responding felt they had received adequate guidance in course selection and development of their U.S. graduate programs, whereas 25 percent felt it had been inadequate. There was no significant difference between first- and second-ranked U.S. universities. Those with Ph.D.s were somewhat more pleased with the guidance received than were those with M.S. degrees only. Only 67 percent of the alumni who had started but not finished Ph.D.s were pleased with the guidance received. Overall, Africans were happiest with the guidance received (80 percent), contrasted to 72 percent each for Latin Americans and Middle Easterners.

When counseling was considered good, the most important reasons given were that the major professor was accessible, interested in the student, and knew his interests. A smaller percentage felt they had been well advised on courses to take. There were no substantial differences in responses using U.S. university rank or geographic areas. Professors were considered to be somewhat more accessible for Ph.D. than for M.S. students. More M.S. students than Ph.D.s felt they had had good advice about which courses to take (see Table 2.6).

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[1]Universities were grouped according to F. M. Boddy's survey of 31 Ph.D.-producing departments of agricultural economics in the United States. The 14 universities included in the first ranking were judged on the reputational standing of their graduate faculties and graduate programs. Dr. Boddy is Professor of Economics at the University of Minnesota.

TABLE 2.6 -- EVALUATION OF COUNSELING RECEIVED BY LDC GRADUATE STUDENTS IN AGRICULTURAL ECONOMICS IN U.S. UNIVERSITIES

Categories	Guidance Adequate		Guidance Inadequate	
	No.	%	No.	%
Total Sample	477	75	160	25
1st Rank U.S. University	284	75	93	25
2nd Rank U.S. University	193	74	67	26
M.S. Only	190	72	73	28
ABD Status	62	67	30	33
Ph.D.	225	80	57	20
Asia	195	77	60	24
Africa	68	80	17	20
LAC	146	72	58	28
N. Africa & ME	39	72	15	28
Other DCs	29	74	10	26

Reasons given by those who considered counseling inadequate were that the professor was inaccessible, not interested in the student, or unfamiliar with his interests. Other reasons were that the advice was too rigid or the advisor was not familiar with LDC problems and needs. The most common complaint concerned not being well advised on the most useful courses. These responses emphasize the importance of having U.S. professors who are knowledgeable and interested in developing countries' problems to advise LDC students in their graduate programs.

Problems with English

Approximately one-third of LDC alumni felt they had an English-language problem when they first came to the United States. The problem lasted from three months to two years. For 90 percent of those with English deficiencies, the problem lasted up to one year. Approximately 30 percent each indicated one term, six months, or one year (see Table 2.7). These percentages did not vary substantially between first- and second-ranked U.S. universities. There was, however, a substantial difference between M.S. and Ph.D. alumni; 41 percent of

the M.S. alumni had language problems compared to only 26 percent of the Ph.D. alumni. However, 72 percent of the M.S. alumni had resolved their language problems within six months compared to only 45 percent of the ABDs and 55 percent of the Ph.D.s.

TABLE 2.7 -- PROBLEMS WITH ENGLISH

	Language Problem				Duration of Problem			
	No Problem		Yes--Lang. Problem		One Term	Six Months	One Year	Two Years
	No.	%	No.	%	%	%	%	%
Total Sample	431	67	216	33	31	32	28	9
1st Rank Univ.	255	67	125	33	29	32	29	11
2nd Rank Univ.	176	66	91	34	33	32	27	7
M.S. Only	157	59	111	41	37	36	24	4
ABD	63	68	30	32	21	24	41	14
Ph.D.	211	74	75	26	27	28	28	16
Asia	158	61	101	39	34	25	28	14
Africa	80	94	5	6	20	20	60	-
LAC	136	66	71	34	25	44	28	3
N. Afr. & ME	36	67	18	33	40	20	25	15
Other DCs	21	50	21	50	33	38	24	5

Another interesting difference is that only 6 percent of the African students said they had language problems compared to 39 percent for Asians and 34 for Latin Americans. Higher proportions of Ph.D.s, Asians, and students from the Middle East had language problems for up to two years. A high proportion of Africans are from English-speaking countries, which explains why they had little language problem. There are no good explanations why Ph.D.s had more persistent English problems except that Ph.D.s are probably expected to achieve a higher level of competency, especially in their dissertation research.

Respondents were also asked what they considered to be the best way to study English. The most frequent response (37 percent) was to learn it before coming to the United States. This advice was emphasized more by respondents with Ph.D.s. This may indicate that a higher level of English proficiency should

be required for admission of Ph.D. students from LDCs than for those enrolling for the Master's degree. The hypothesis is that Ph.D.s must have a greater command of the English language to fully understand economic theory and adequately express their ideas in English.

The next most recommended procedure was to spend two to three months in an intensive U.S. English program before beginning regular classes. There were 23 percent of the sample in this group. The other alternative given was to take English courses and a limited academic load during the first term in U.S. graduate school. There were only 12 percent of all respondents who recommended this procedure, but another 7 percent recommended it in combination with learning some English before coming to the United States. There is clearly no one best way, but the more English a student has before entering a U.S. degree program, the better. Also an intensive English course for several months before classes start is preferred over combining limited formal course work and English classes. For some, a combination of both will be needed.

Effect of U.S. Training on Career Development

When asked to evaluate the usefulness of U.S. graduate training in their career development, 75 percent indicated it had been extremely useful, and 21 percent said it was moderately useful. Only 4 percent, or 25 of the 642 who responded to this question, said their U.S. training was only slightly useful, of no value, or had had a negative effect on their professional careers. By geographic region, 81 percent of the Africans and 72 percent of the Latin Americans felt their U.S. training was extremely useful. Greater differences are noted by degree status. Eighty-five percent of Ph.D.s ranked their U.S. training as extremely useful, compared to 65 percent of those with only M.S. degrees (see Table 2.8).

Respondents were also asked to give reasons for whatever evaluation they made. Over half of the responses related to becoming a better scientist. These former students of agricultural economics often spoke of the confidence that they now felt in their ability to do research and to deal with problems creatively. Many spoke of being proud of their U.S. training and of the status and esteem that their U.S. degree had brought them. Another intangible benefit often mentioned was the broadening effect that their experience in the U.S. had had on them. They seemed to feel that their contact with students from around the world and with U.S. professors had often been as rewarding an experience as their actual course work and thesis activities.

TABLE 2.8 -- EVALUATION OF USEFULNESS FOR CAREER DEVELOPMENT OF U.S. TRAINING FOR LDC ALUMNI

Categories	Extremely Useful %	Moderately Useful %	Slightly Useful %	No Effect or Negative %
Total Sample	75	22	2	2
Degree Status				
M.S. Only	65	30	3	3
ABD	72	21	5	2
Ph.D.	85	14	1	-
Region				
Asia	75	21	2	2
Africa	81	15	2	1
LAC	72	24	3	2
N. Africa & ME	72	26	-	2

A rather common set of responses dealt with the enhanced employability and higher salaries of holders of U.S. degrees in agricultural economics. No respondent complained of having had difficulty in finding employment. Those who felt that their training had had an especially beneficial impact on their careers to date were often working in LDC universities or international agencies. Those working for home-country governments were more likely to feel that in-house political factors were sometimes more important in determining promotions than their level or source of training.

Others stated that their long absence from their countries put them at a disadvantage. When they returned from the U.S., they had no contacts in local institutions to act as their patrons as they began their careers. Some mentioned that they had to deal with substantial jealousy from other workers who had not been able to go abroad for training. This was mentioned as a problem only in a few cases, and then only by people now working in LDC government agencies.

The criticism of U.S. training most often expressed concerned the applicability of U.S. training in solving real problems in LDCs. The most common complaint along these lines was that the economic theory learned in the U.S. was of limited help in real-life situations in LDCs. In addition, some respondents

expressed dissatisfaction with courses such as agricultural policy and resource economics as well. They pointed out that topics studied in these courses were generally oriented towards the U.S. and that LDC-related topics were ignored.

It seems that those respondents who complained of the limited appropriateness of their U.S. training had often just recently returned from the U.S. Economists who had had more work experience seemed to be less likely to express a similar concern. This phenomenon suggests that, although some aspects of training in the U.S. may not be applicable in LDCs, a process of adaption takes place over time in which the professional learns how to put skills learned in an American context to work in an LDC environment. Only 8 percent of all responses were negative or considered U.S. training as only marginally valuable.

In summary, the great majority of LDC respondents were highly positive about the value of their U.S. training. Pride, confidence, and status were key words used to express their feelings. The skills most often mentioned as having proved especially useful were those in quantitative areas, the ability to do research, and to evaluate projects. Although this speaks well of the ability of U.S. programs to teach technical skills, it may well also be a comment on the limited success of U.S. programs in teaching policy and applied theory courses useful to LDC students.

The following are a number of representative comments made in response to this question.

> Living in a culturally rich society is by itself a very valuable experience. (Sudan)
>
> Usually we cannot apply the knowledge that we gained in the U.S. because of problems with data, etc. (Brazil)
>
> My employers are generally biased against university graduates, particularly those from foreign countries. Standards other than graduate training are used to upgrade and financially reward personnel. (Cameroon)
>
> Although there were some shortcomings in my U.S. training, it was definitely extremely useful and I am very proud of it. (Sudan)
>
> My career is still in its infancy, but in future years, on my return to Guyana, my training in problem identification and solution shall prove to be my greatest asset, because this is a problem area in most LDCs. (Guyana)

In terms of the specific knowledge required for actual project formulation and evaluation, the training received was moderately useful. In terms of my formation as a professional and as a more rigorous intellectual, extremely useful. In terms of my understanding of the world in general, again extremely useful. But then this may be something specific to the university where I was trained. (Argentina)

It helped me to know why we are less developed. (Egypt)

It has helped in seeing and solving problems. I now see problems in a different perspective and am not as apt to try to apply ready-made, textbook answers to all problems. (Ghana)

The emphasis placed on U.S. studies is more for developed countries and does not always apply to developing countries. (Venezuela)

At first, I found that most of the knowledge I had was not easily applied to the everyday situation of Central America, but my training has been helpful in the long run. (Costa Rica)

When you mix with graduates from places other than the U.S., you really feel proud with the training you got in the U.S., simply because you really have something to offer. (Egypt)

Upon my return I have found that local graduates have more practical experience with day-to-day applications of economic knowledge, whereas I had more theoretical knowledge but had more difficulty applying it to solving practical economic problems. (Guatemala)

We are at a great advantage compared to those educated in Europe, especially in the quantitative areas. (Turkey)

I do not consider myself an LDC economist. I am a qualified economist capable of performing well wherever an economy exists. (Jamaica)

After graduating from U.S. University X, I realized I could have secured a similar or even better education in an Indian university. However, the stamp of one of the better known American universities is more marketable, job-wise. (India)

When jobs are few and competition hard, the local pressure points become important to go up the ladder in one's own country. This is not true if one wants to pursue an "international" career. Then a good academic background becomes more important. (India)

It has opened to me broad, new job alternatives. (Argentina)

The training provided enabled me to have a better understanding of some of the basic problems in economic theory. This coupled with the development courses has better equipped me to organize my research here. (Sri Lanka)

In terms of the theoretical knowledge, well and good. But since my university emphasized practically none of the problems related to my country, I felt I should have gone to another university. (Ethiopia)

Promotions in government departments are made on the basis of seniority and efficiency. Foreign training receives more weight at the time of selection for fresh appointments and practically no, or little, weight is given in cases of promotions. (Pakistan)

I have had to pay the price of losing important connections in my country and suffer from excessive naivete which is encouraged by an otherwise excellent training in the U.S. (Guatemala)

The main value was an academic discipline and instrumental formation for research. The main problem was the lack of objective social sciences such as political economy and the theory of capital development and imperialism. (Chile)

Some of the professors have no exposure to developing countries. For example, in ag. policy, what we were taught was purely for U.S. conditions. In resource economics, the discussions were mainly on strip mining and pollution control which are not relevant at present in our country. (Philippines)

I believe that post-graduate teaching in the USA is infinitely more thorough and systematic than that in the UK on which we tend to model our teaching. Consequently, I have since returned to Nigeria and revamped our graduate program in line with that of the U.S. (Nigeria)

Nondegree Training for LDC Agricultural Economists

All the training needs of LDC agricultural economists cannot be met through formal U.S. degree programs. Some gaps are bound to exist in any recent graduate's education due to time restrictions or curriculum limitations at the U.S. degree-granting institution. There is also a need to periodically update past training and learn new analytical techniques and/or concepts needed for better job performance. LDC professionals have a tendency to become isolated from the mainstream of professional development. Interaction with peers in their own countries is also more limited and difficult. The accuracy and significance of these assertions were tested in the mail questionnaire.

Respondents to the AAEA survey were asked if they had attended any special nondegree programs over the past five years, as well as the type of program and sponsoring agency. This was followed by a series of questions about what additional skills, training, and professional experience were needed to meet their own professional goals over the next five years. Was the desired training

available in their own country and if not, where? What form should the training take and how long would such training last? Respondents were also asked what constraints existed in getting the training indicated.

Approximately one-third of LDC-survey respondents had participated in some special nondegree training program over the past five years (see Table 2.9). A considerably higher proportion of those with M.S. degrees (42 percent) had received special training than had Ph.D.s (30 percent). It is reasonable to expect that professionals with M.S. degrees have more need for additional training than Ph.D.s. They also tend to hold jobs in LDC governments and planning agencies that require skills not emphasized or available in many U.S. graduate programs within the time allotted for completing standard formal degree requirements.

TABLE 2.9 -- PARTICIPATION IN SPECIAL NONDEGREE PROGRAMS IN THE PAST FIVE YEARS

Classification	No.	%
Total Sample	214	35
Asia	79	31
Africa	34	40
LAC	75	39
N. Africa & ME	18	34
Other DCs	8	24
M.S. Only	108	42
ABD	23	26
Ph.D.	83	30

Most nondegree training has been in areas in which improved skills were needed for better performance of job-related responsibilities. Since the types of jobs that respondents hold vary greatly, so do the topics of study explored by the respondents in training programs. A sample of these topics includes:

Agribusiness Studies
Ag-Extension Programs
Ag-Industrial Projects
Ag. Planning and Development
Bank-Employee Training
Communications
Computer Science
Cropping Systems
Environmental Control
Farm Management
Human Resource Administration
International Trade
Policy Analysis
Production Economics
Project Evaluation, Planning
University Administration
Water Law

Most nondegree training was obtained by respondents while they were employed instead of between jobs. These programs usually take the form of one- to two-day seminars or workshops or intensive short courses running for from one to two weeks. These modes account for over 70 percent of nondegree training. Training of this nature generally occurs in the respondent's own country or general region of employment. Cases in which respondents traveled to the U.S. or some European country for training at the headquarters of an international agency or a DC university were rare.

Most nondegree training programs were sponsored by international agencies and institutes (37 percent) such as IBRD, OAS, IICA, FAO, CIMMYT, and IRRI (see Appendix F). Many of these primary sponsoring agencies collaborate with LDC institutions to offer training programs jointly. Bilateral development agencies including AID and other U.S. government agencies offered 18 percent of the training programs, compared to only 5 percent offered by other DC governments. Next in importance were LDC government agencies, which offered 17 percent of the programs, often with support from international sources. LDC universities were sponsors in 8 percent of the cases, U.S. universities in 6 percent, and other DC universities in 2 percent.

Additional Training Needed

The type of additional training respondents felt they needed depended heavily upon the present status of their careers and their short- and long-run future plans. Those who had just begun careers and were not contemplating a career change often mentioned a need for additional skills in areas they needed to perform effectively at their jobs. The skill areas mentioned were, for the most part, areas in which departments of agricultural economics offer instruction. This response seems to suggest that students of agricultural economics

often have difficulty scheduling into their degree programs all the study areas that agricultural economists are expected to know. Such was the case with both M.S. and Ph.D. degree holders (see Appendix G).

Even though just about every topic studied in agricultural economics degree programs was mentioned as an area in which additional training would be welcomed, some subject areas were mentioned more frequently than others. Lecturers and young professors often cited a need for additional training in statistics, in other quantitative skill areas, and in research methods. LDC government employees also felt a need for a greater familiarity with modern econometric, statistical, and research techniques. In addition, a need for greater expertise in linear programming and operations research was often mentioned. Another area in which many professionals in government or international agencies felt inadequately prepared was in project development and evaluation.

Most students who were still working on, or nearly completing, their degree work did not often perceive a deficiency in their training. Comments from this group of respondents usually emphasized a need for experience or for a chance to put their education to work. This suggests that it is difficult to prepare a program of study that will adequately train an agricultural economist in all relevant fields. If this were not the case, it would probably be easier for students to identify gaps in their programs before they begin their careers.

Training needs perceived by agricultural economists just beginning careers and students still involved in degree programs have been discussed. Next, we wanted to know what the training needs were of respondents who have already been working for a period of years. Alumni in this category who have only Master's degrees often expressed an interest in returning to the U.S. for doctoral studies. Respondents who already had doctorates often talked of a need for refresher courses, travel, and increased contact with agricultural economists from other countries. Many expressed a desire for an opportunity to do some work in an international agency. These types of perceived needs may suggest that respondents who have been working in their countries of origin for a while begin to feel isolated from their colleagues in the profession.

Those in academia often suggested that they needed from six months to a year of release time in order to catch up with recent developments in their fields of expertise. Some younger faculty members obviously felt that their careers needed a boost and wrote that they would like to be able to do research with some known scholar or to do postdoctoral work in some prestigious university in

the U.S. LDC professors who have become highly involved in teaching often wished for the chance to do more research and to publish. All this does not mean that respondents who have been working for a number of years never mentioned a need for more training in economic theory, or mathematics, or other courses. There are those who felt the need to tackle a new area of study or to reacquaint themselves with a familiar area. These respondents also tended to emphasize a need to expand their knowledge of quantitative skills.

Thus far we have discussed training needs as perceived by agricultural economists trained to the M.S. or Ph.D. level who have either just begun their careers or who have already been working for several years in positions directly related to the field of agricultural economics. There is a third class of respondents with degrees in agricultural economics who are currently involved in work either partially removed or entirely removed from agricultural economics as a discipline. This group includes government agency or university administrators who started their careers as professional agricultural economists but later moved into administrative posts. It also includes a few people who were completely removed from agricultural economics so that their training needs differed substantially from the needs of agricultural economists directly involved in the areas of their graduate training. For example, this latter group most often mentioned a need for courses and seminars in management techniques, administrative topics, and business practices.

There are others who mentioned such things as a need for aerial photography, interpretation, and satellite monitoring. One respondent, who is now the Minister of Agriculture of Liberia, listed only French as an area in which he presently needs training. While many areas of training needs are quite predictable, there do exist a number of areas listed by respondents that are unusual.

Sample of Respondents' Comments Concerning Additional Training

> More than additional training what I would need is a periodical opportunity to meet with other social scientists for periods of about two to three months to discuss and write about agricultural policy issues. (International Advisor, Acuerdo de Cartagena, Bolivia)

> As head of a task force on setting up a Land Study Center in this university, I would like to develop further my expertise in land economics, specifically in the mechanics of a land data bank, aerial photography, and the multi-dimensional study of land. (Professor, Malaysia)

Computer programming is very essential since I need to develop and analyze models due to a lack of qualified personnel to assist me. (Rubber Research Institute, Malaysia)

Visiting fellowship or visiting professorship in a top university in the U.S. for an exchange of ideas and for updating of knowledge. (Head of Agricultural Economics Division, Indian University)

I need to be exposed to more techniques of project evaluation and analysis. I need another training in terms of coordinating extension activities results. (Lecturer, Lagos State College, Nigeria)

What I need is more opportunity for private research and publishing, touching on various aspects of international development problems. (U.N. Economic Officer, Tanzania)

I need the professional experience of teaching in a U.S. university and of working on a research project that covers some aspects of agricultural economics of developing countries other than India, and/or of working in an international agency for analyzing the comparative development of several developing countries of Asia or Africa. (Reader, Delhi University, India)

I definitely need some applied work exposure in computer programming, specifically on how to convert static models to more dynamic ones. I feel depleted after three years of work. I need a few months of refresher courses from a university. (Consultant, Philippines)

All I need now is the opportunity to put my acquired education to use. (Recent Ph.D., Nigeria)

I need more skills in field research, in analyzing agricultural projects; and more concentrated studies in some areas as in occupation of new frontiers; decision guide regarding low-income farmers; etc. (Professor, Brazil)

Luck, a good economy, and currency stability. The rest, that is, in terms of additional education, I do not need. If a man needs more education after having studied graduate courses, he is in need of a new head. (Consultant, Chile)

I need more experience in research and analyzing projects. It would be useful for me to practice statistics and mathematical tools. I require experience in analyzing credit. (Agricultural Economist in Ministry of Planning and Economic Policy, Panama)

To practice. To apply what I have studied. To feel sure that I can take my acquired knowledge to the practical field, and that it can yield benefits to my country. After that I will evaluate my future needs. (Recent Ph.D., Dominican Republic)

I feel I need more training in computer programming and operations research, and also to be attached to a U.S.-based international research agency to acquire some extra proficiency in research techniques and administration. (Lecturer, University of Ibadan, Nigeria)

Methodology in comprehensive agricultural sector planning. I do not have training or skills or experience in this area. Yet I am expected to be involved. (Senior Lecturer, University in Indonesia)

Additional Training: Time Required and Constraints

Most respondents felt that their training needs, at least the ones that could be met in an academic setting, could be taken care of in the U.S. Some, however, mentioned the possibility of obtaining additional training in Western Europe, Canada, Australia, Israel, Russia, and Japan. Many respondents noted that, because of their previous experience in the U.S., it would no doubt be easier to arrange for additional training there. On occasion, specific institutions in the U.S. (both universities and agencies) were mentioned as places to go to for more training. No specific university in any other developed country was named as a possible school to enroll in for course work, training, or seminars. These responses suggest a greater familiarity with U.S. institutions and thus a higher likelihood of LDC professionals seeking additional training there.

Respondents often stated that additional training did not necessarily have to entail going abroad, that their immediate training needs could be met in local or regional universities. On-the-job training and training from visiting specialists were both named by over 60 percent of the respondents as appropriate methods of obtaining additional training. As a matter of fact, on-the-job training was the second most commonly suggested method for acquiring additional training and was cited by over 40 percent of those who commented on this issue. Both of these methods of training may be acquired locally and require little or no traveling.

Over 54 percent of the respondents felt that short courses were an appropriate format in which to receive additional training. This response indicates that, whether respondents felt it necessary to go abroad for further training or not, academic classroom instruction is looked upon as the most desirable way of acquiring additional training.

The length of time respondents felt was necessary for more training is a function of the type of training they were interested in receiving. Thus, responses range from three years for doctoral studies to three days for seminars.

Over 70 percent of the sample felt the training they needed could be completed within one year.

Respondents were asked to indicate constraints they faced in getting the training desired. Over half of them listed financial problems, 17 percent said they could not get a leave from their jobs, and 15 percent did not know where the training was available. Financial problems were most frequent for those who wanted longer formal training programs. Most respondents were uncertain where training in research methodology could be obtained. Also, they were uncertain how and where to obtain good research and field experience. Perhaps most significant is that all respondents felt there were severe constraints in obtaining additional training of the type they desired.

Selected Comments of Respondents on Where and How to Get Additional Training

> Through programs of assistance, contracts and others, which would make it possible and easy to return for short periods (up to one year) to the U.S. for updating one's knowledge, to get some experience and advice on a particular subject, and to prevent obsolescence of the previous investment. (Senior Specialist, Bank of Portugal)

> One example is exactly what I am doing here in Ames, Iowa at the Center for Agricultural and Rural Development. The advantage is that the Center is on campus. One can develop his own course program at the graduate level as well as your own research in which you are interested in your country. (Researcher, Government of Brazil)

> An alternative to seminars and short courses would be to develop a work program around a specific topic together with a U.S. university professor and go to the U.S. for a certain period of time to get that kind of informal training. (Visiting Expatriate Professor in U.S. University)

> Foreign visiting specialists will only be helpful if the trainee already has a fairly good background in the field. Seminar types of courses and actual experience would be better. (Professional Agricultural Economist, Ministry of Agriculture, Tunisia)

> Mostly studying at a university which has good library facilities on international development issues; (formal courses in development and international economics could be included in the study program) and visits to institutions such as the OECD, IIASA, and the World Bank. (Visiting Argentine Professor, Brazil)

> Graduates should go abroad and audit some courses but must have enough time to visit and know practical cases in those areas of interest. This can be promoted at home and abroad in a cooperative type of agreement. (Agricultural Economist, Central Bank of Colombia)

Experience with visitors from the SRS/USDA was a good one, but for cattle and mixed crops questions we may need another institution to help us solve our problems. (Ministry of Agriculture, Tunisia)

Taking into account economic as well as time constraints, short courses or seminars on specific topics seem to be the more interesting form of education. The usual problem is normally the financing of the course and expenses related since the professional has to completely bear the opportunity cost. The possibility of actual job experience in a national agricultural agency should be strongly considered. (Project Director, Spain)

To have a comprehensive picture of the development of economic thought and its relation to economic development. (Econometrician, OAPEC)

Foreign visiting "experienced" specialists for two to three years and not one year which is fruitless. (Agricultural Officer, Ministry of Agriculture, Nigeria)

In summary, areas of training most often mentioned as being needed included quantitative methods, more traditional agricultural economics courses, agricultural sector planning, project evaluation, and policy analysis. Management and administration were also mentioned frequently. These needs coincide with areas most LDC alumni of U.S. universities would like to have emphasized more in their formal graduate training. It is both possible and desirable to meet some of these training needs through special short courses, seminars, and nondegree programs of up to one year's duration. U.S. universities have not been very active in this type of training, but it offers promising possibilities both for delivery in LDCs and on U.S. campuses. It would be worth the effort to explore possibilities for collaboration with LDC universities and professionals in this regard.

Major Strengths, Weaknesses, and Ways to Improve U.S. Graduate Training

Opinions on this set of interrelated topics were obtained from the mail survey of LDC alumni of U.S. graduate programs and from personal interviews with professional agricultural economists and their employers in nine less-developed countries. The strengths and weaknesses of U.S. training, as well as ways to improve it, were posed as direct questions in the country studies. In the mail survey, respondents were asked to evaluate their course work, thesis experience, advising received, additional training needs, and the effect of U.S.

training on their careers. From these responses, it was possible to reach some qualified conclusions about the effectiveness of U.S. graduate training in agricultural economics for LDC professionals.

In general, the findings from both the mail and country surveys reinforce each other. The strength of U.S. programs most often emphasized was the comprehensive training in economic theory and quantitative methods that provide LDC alumni with strong conceptual and analytical skills. This training has enabled them to think logically and inspired a great deal of confidence in their problem-solving capabilities. In addition to the core courses in theory and methods, the breadth and depth of other courses available was considered a major strength. Alumni from countries with a European tradition in education especially appreciated the course-work structure of U.S. graduate training. They felt that the wide exposure to many subject areas had prepared them to teach and work in several broad areas of agricultural economics.

Other strengths of U.S. training brought out in the country surveys were good student/staff interaction in which students have ready access to professors who are willing to spend time with them. There is also a healthy exchange of ideas and discussion in the classroom. The infrastructure for learning and research is extremely favorable, especially when compared to conditions in many LDC universities. Good library facilities including journals and other reference materials, access to reliable data, efficient computing facilities, and good study quarters are some other items most frequently mentioned.

The strengths of U.S. training as indicated above were brought out consistently in all the country studies. This observation was just as true for Nepal, where the local profession is poorly developed, as it is in Brazil, Nigeria, and India, where agricultural economics is more established as a discipline. When M.S. training is available locally, it is usually preferred--especially by employers, but the overall consensus clearly placed the U.S. first for Ph.D. training. Even in socialist countries like Tanzania, the importance of U.S. training in theory and quantitative methods was stressed. According to respondents from these countries, analytical tools are needed for planned economies just as much or more so than for capitalistic systems.

Although U.S. training received high marks overall, weaknesses or deficiencies for LDC students were also identified. Most of the information on shortcomings was attained through personal interviews conducted for the country studies. Perhaps the major complaint stemmed from the lack of knowledge and

perception of LDC problems by U.S. professors. LDC professionals felt there had been too little application of economic theory and quantitative methods to LDC situations. Many would like to see more attention given to the political, social, and economic problems in development. LDC professionals felt a need to bridge the gap between theory and application, and to be made more aware of the shortcomings of neoclassical theory as well as its strengths in analysis.

It was mentioned frequently that U.S. courses are predominantly oriented to developed-country institutions and problems. Many courses are available, but LDC students need to be mature in order to choose among them wisely and interpret their content in the perspective of their home situations. The problem is that many LDC students who come for training are inexperienced and need considerable counseling and guidance in developing their study programs so as to include more practice in the application of principles learned in formal courses. For example, a summary sentence in the Nigeria country report stated that "the lack of application to Nigeria problems and particularly to problems of farmers" is a major deficiency of U.S.-based training.

Another concern noted frequently was the need for more emphasis on practical areas or subjects such as project evaluation, agricultural planning, and policy analysis. The need for more applied quantitative techniques was also stressed. The majority of those working in government and the private sector cited a need for more skills to analyze practical policy and operational problems. This deficiency is reflected in the statement of an FAO specialist in Cairo:

> Government decision making requires rather quick advice on possible alternatives. Graduate study in agricultural economics generally does not train students specifically for such tasks....Many graduate students from developing countries while picking up a great deal of general economic theory fail to pick up practical skills for performing various analyses.

There was general support for broadening the base of U.S. training to encompass more of the interests and needs of LDC professionals. The list included practical courses such as project preparation and appraisal. Those in administrative positions would like training in management and public administration. In several countries, concern was expressed about the lack of emphasis on political economy and the Marxist approach to problems of development. Students trained in the U.S. usually are not well prepared to intelligently discuss the issues of alternative economic systems when they return home. Although all these are valid interests and concerns, the basic question is how much more can

be included within the time and funding constraints of a formal M.S. or Ph.D. program. No doubt some of these needs will have to be met through both long- and short-term nondegree training and/or workshops on specific issues, skills, and techniques that U.S. universities could provide.

Employers of agricultural economists in the LDCs were somewhat more critical of U.S. training than were the professional agricultural economists. However, the same strengths and weaknesses were emphasized. For example, the employers noted that U.S. training contributes substantially to the overall development of the LDC student by giving a broader perspective of problems, with emphasis on the scientific approach in analysis. This aspect of U.S. training is considered especially important for Ph.D.s. At the same time, however, there is concern about the lack of focus and application to LDC problems. Some employers would like to see U.S. training broadened to include more interdisciplinary work. When adequate M.S. training is available locally, most employers prefer it to U.S. training. Finally, there is concern about those going to the U.S. becoming disoriented to their local situations, especially when they are away more than two years at a time.

Both LDC employers and professional agricultural economists suggested that U.S. training could be substantially improved if more U.S. professors had first-hand knowledge and experience in LDCs, especially for student advising and thesis direction. It was also felt that existing courses could be broadened to include more application to LDC problems and conditions. Many would like to see more attention given to alternative economic development strategies and also to the more practical aspects of project appraisal, sector planning, marketing, and management studies. All respondents agreed that LDC students need a broad range of training, including more application of theory and methods to LDC problems.

CHAPTER 3

STATUS OF AGRICULTURAL ECONOMICS IN THE LDCs

Although U.S. universities have a strong commitment to the training of professionals from LDCs, there is an underlying long-term goal to assist these countries in the development of their own institutions for training, research, and policy formation. No country wants to continue to depend indefinitely on outside training sources to meet all its professional manpower needs. Nor is it possible for an LDC to develop the adequate national knowledge base and problem-solving capabilities needed to formulate and execute national development policies without strong local institutions. U.S. universities have a role not only in the initial training of LDC professionals in the U.S. but also in providing support in their institution-building activities through direct technical assistance. There is also a need to form longer-term linkages for continuing interaction and development.

In addition to the evaluation of U.S. training, another major objective of the AAEA study was to look at the status of agricultural economics capabilities in the LDCs and their needs for future development of the profession. Several aspects were emphasized. First, what demand exists for agricultural economists in the LDCs and with what level of training? Second, what training capabilities exist in the LDCs, what are the strengths and weaknesses of these programs, and what levels of training (B.S., M.S., or Ph.D.) should be emphasized over the next five to ten years? Finally, what major problems does the profession face in its further development in the LDCs, and what can the U.S. profession provide to help strengthen local efforts? Most of the information for this analysis came from the country surveys.[1]

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[1]The reports on Brazil by Roger Fox, Egypt by M. E. Quenemoen and James Fitch, India by R. K. Sampath and Russell Stevenson, Kenya by Tyler Biggs, and Nigeria by Werner Kiene are most relevant.

Demand for Trained Professionals in the LDCs

The AAEA surveys in nine countries confirmed a widely held belief that the demand for agricultural economists continues to exceed LDC training capabilities. Employers indicate a growing need for B.S.- and M.S.-level agricultural economists to fill staff positions in government ministries, credit institutions, and parastatal marketing agencies. Ph.D.-trained economists are sought mainly by LDC universities that already have or are establishing graduate teaching and research programs. They are also increasingly sought for positions in government planning units and research institutions. In LDCs that have moved up toward the middle per capita income range, a rapidly growing demand for agricultural economists with B.S.- and M.S.-level training is emerging in the agribusiness sector.

Demand for agricultural economists in Nigeria, Kenya, and Tanzania was reported to be especially strong and growing. Many have moved into important decision-making positions in the public sector. Agricultural economists' views are sought and highly respected in Nigeria. These people serve in government advisory positions and are members of planning commissions and other government agencies. The author of the country study in Nigeria felt, however, that agricultural economists "had limited influence on policies that affected the sector from outside."

In India, employment prospects for agricultural economists were considered "good to excellent" in spite of the fact that local universities now produce over 200 M.S. graduates and a substantial number of Ph.D.s each year. Agricultural economists are being "drawn more and more into the policy-making process." Several U.S.-trained agricultural economists occupy high-level positions in the government. This phenomenon has developed largely in the past six to seven years. A similar situation exists in Brazil. The skills of agricultural economists are also sought in countries with less-developed training capabilities, such as Nepal and Guatemala.

The services of agricultural economists were least appreciated in Colombia, where real difficulties have been encountered in trying to institutionalize the profession. However, even here there was evidence of involvement by agricultural economists in the policy-making process. In neither the mail survey nor the country studies did anyone complain of being unable to find employment as an agricultural economist. The findings of this study indicated that job opportunities are excellent and growing in the great majority of LDCs.

Country and Regional Variations in Training Available

The capacity to train agricultural economists varied widely among the nine countries surveyed in this study. Very limited in-country training capacity exists in countries such as Nepal and Guatemala. Kenya and Tanzania are countries where significant progress is being made in establishing B.S.- and M.S.-training capabilities. India, Brazil, Egypt, and Nigeria have progressed much further and now train sizable numbers of students at the B.S. and M.S. levels and have active but not well-developed programs for Ph.D. training. All of the countries in this latter group have adopted policies of restricting scholarships for study abroad to Ph.D. candidates.

Among the LDCs, India undoubtedly has the greatest number of agricultural economists and the greatest capacity for training them. The total number of professionals in India is estimated at between 900 and 1,000. India has 22 agricultural universities, all of which have agricultural economics departments. Most of them offer graduate training as well as undergraduate degrees in agricultural economics. Training in the economics of agriculture is also available in most of the nonagricultural universities. It is estimated that some 200 students complete the M.S. degree in agricultural economics each year at the agricultural universities alone. Approximately 75 enter Ph.D. programs in India each year, but considerably fewer graduate. According to the Stevenson survey data, an additional 12 Indians, on the average, entered U.S. graduate programs each year between 1969 and 1977.[2]

Brazil also has substantial training capabilities in agricultural economics, but the profession is newer and less well established than in India. In 1960, there were no graduate or undergraduate programs in agricultural economics, and fewer than six Brazilians had graduate degrees in this discipline. By 1972, four graduate programs had been established, over 200 alumni held M.S. degrees of which 160 had been granted under Brazilian programs, and there were ten Ph.D.s working in the country. These programs have continued to grow, and several more have been initiated. Training capacity for the M.S. degree more than doubled between 1972 and 1977, with from 50 to 120 new entrants each year. Brazil has one Ph.D. program in agricultural economics, which was established

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[2]Russell Stevenson, "Graduate Students from Less Developed Countries: The Continuing Demand for U.S. Training;" also "U.S. Graduate Students from Less Developed Countries."

in 1972, but by 1977 very few students had entered the program and even fewer had graduated.[3]

Tanzania and Kenya are countries with more limited institutional capacities to train agricultural economists at the M.S. and B.S. levels. Each country has an M.S. program, but Kenya is more developed than Tanzania both in the capacity to accept a larger number of students and in the supply of qualified applicants who desire to receive M.S.-degree training. The universities in both countries continue to depend heavily on expatriate staff. At the present time, each country has fewer than ten Ph.D.s and only about 25 professionals with M.S. degrees.

The majority of LDCs have virtually no institutional capabilities to train agricultural economists. These are typified by countries such as Nepal and Guatemala. Neither B.S. nor M.S. training is offered in either country, and the numbers of trained agricultural economists are small. For example, Nepal has only 4 Ph.D.s and 18 M.S.-degree holders. These numbers are even larger than for most countries of this size and income level largely due to support from the Agricultural Development Council (ADC) to develop a nucleus of competence in this area. There was a further consensus of those interviewed that ten to fifteen more M.S.- and Ph.D.-trained agricultural economists could be employed each year in Nepal for at least the next five years.

Among the four regions, Asia ranks at the top in availability of graduate-training capability; Latin America, Africa, and the Middle East have less institutional capability. India has more agricultural economists and more graduate programs than any other Asian country; but South Korea, the Philippines, Malaysia, Taiwan, and Thailand also have established professions of agricultural economics with graduate-training capabilities. The profession is still very new in Africa with Nigeria as the clear leader, followed by Kenya and then Tanzania; however, fewer than 50 M.S. graduates per year are produced in all three countries combined. This supply does not begin to meet their needs much less than for the rest of Africa. Egypt is about the only country in North Africa and the Middle East with graduate-training capability. Substantial investments have been made by international-funding agencies to develop

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[3]"Higher Education Programs in Agricultural Economics and Rural Sociology in Brazil," Report No. 85, MSU/Brazil/MEC Project (December 1977): 4.

agricultural economics in Latin America, but, outside of Brazil, Chile, and Mexico, there is little institutionalized capability.

Strengths and Weaknesses in LDC-Training Capabilities

Even in countries with better-established graduate training programs, local professionals often felt that the quality of training was relatively poor due to the continued scarcity of faculty resources, teaching materials, facilities, and equipment. Existing faculty often supplement their relatively low university salaries with other jobs and, therefore, spend relatively little time relating to students outside the classroom or in carrying out research relevant to their subject-matter areas. Also, the shortage of faculty makes it necessary for individual professors to teach a wide range of courses often in areas for which they are poorly prepared. Thus, courses with little depth and limited practical content are offered far too often. There is also a problem in providing adequate guidance to graduate students in their thesis research. When professors do not have their own established research programs, it is more difficult for students to define a research problem and adequately carry it out.

The greatest benefit of doing graduate work in an LDC university is the opportunity to adopt and apply economic theory and quantitative methods to local problems and conditions. This is a real advantage even though, for the reasons cited previously, the potential benefits are not always fully realized. However, the need to develop a local research base is a critical part of the institution-building process in most LDCs. There was also a feeling among professionals in the countries with more-developed agricultural economics training capabilities that the quality of such training was steadily improving.

In many cases, LDC employers expressed a preference for locally trained people, although the demand for professionals is often so great that the market does not discriminate among potential employees regardless of where they were trained. This state of affairs is especially true at the M.S. level, whereas, in most countries surveyed, a Ph.D. from a good U.S. university is usually preferred. In general, newly trained graduates from LDC universities are more familiar with their countries' social and economic problems, whereas graduates from U.S. universities tend to have a broader and more rigorous training in theory and quantitative methods. The kind of work to be performed has a definite bearing on the kind of training that is needed. In this regard, it should be remembered that LDC governments, parastatal agencies, and the private

sector provide most employment at the Master's level, and LDC universities are the principal employers of Ph.D.s.

Respondents from countries with M.S. programs were virtually unanimous in the opinion that all M.S.-degree training should be obtained within the home country or region. Only in Colombia, which currently does not have an active graduate program in agricultural economics, was Master's-level training in the U.S. recommended as a first preference. Several respondents in Nepal recommended sending more people to the Philippines and Australia rather than to the U.S. As local training capabilities have increased, both LDC governments and the international funding agencies have largely limited scholarships for foreign training in Ph.D. study and for special nondegree programs. It must be remembered, however, that even in the small number of LDCs with their own graduate programs, their capacity is still quite limited. Often they are unable to provide all the training that is demanded locally, much less serve the needs of the much larger number of countries without any graduate programs. Language is a further constraint when third-country training is offered in a language other than English. The U.S. and other developed countries must continue to serve these training needs until LDC capabilities are developed and/or expanded.

Level of Training Most Needed in the LDCs

The mail survey included 653 responses from LDC alumni who attended U.S. universities. Some of them are no longer in their countries of origin and have only limited knowledge of current LDC agricultural economics capabilities and needs. Professionals from LDCs employed by international agencies may also see problems from a different perspective. Therefore these LDC alumni still living and working in their own countries were separated from the total sample to see if their views and evaluation of training were different. It was further hypothesized that countries with more-developed agricultural economics professions (MDAE) might have different problems and training needs than countries with less-developed capabilities (LDAE) in training and research. These groupings are presented in Appendix H.

It is first of all interesting to observe the difference in the composition of degree status of respondents and their employment when MDAE and LDAE countries are compared. In Table 3.1, it is observed that MDAE countries have substantially higher proportions of Ph.D.s and ABDs and the principal source of employment is in LDC universities. Conversely, in LDAEs nearly two-thirds of

TABLE 3.1 -- DEGREE STATUS AND EMPLOYMENT OF U.S.-TRAINED PROFESSIONALS IN LDCs WITH MORE- OR LESS-DEVELOPED AGRICULTURAL ECONOMICS CAPABILITIES

	MDAE %	LDAE %
Degree Status		
M.S.	42	64
ABD	11	6
Ph.D.	47	30
Employment		
LDC Univ.	50	34
LDC Govt.	37	56
Private	13	10

the U.S.-trained professionals responding have M.S. degrees, and their main employment is in LDC government agencies. Slightly more of the professionals in MDAE countries are employed in the private sector.

When asked what training was most needed to develop the agricultural economics profession in their countries over the next five to ten years, the respondents tended to reflect the current composition and stage of development of the profession in MDAE and LDAE countries. The MDAEs give first priority to more Ph.D. training. When both first and second priorities are added, emphasis on continued strengthening of M.S. programs becomes most important. Both M.S. and B.S. training programs are clearly most important for the LDAE countries that do not have graduate training capabilities. Ph.D. training is considerably less important. These results are presented in Table 3.2.

Another noteworthy observation is that nondegree training is approximately twice as important as a first need for MDAEs compared to LDAE countries. When considered as both a first and second need, it is more important than B.S.-level training in MDAE countries. This points up the importance of nondegree training for MDAEs and indicates that it complements formal degree work but is not a good substitute for it. After the M.S. level has been achieved, nondegree training can be utilized very effectively.

TABLE 3.2 -- LEVEL OF TRAINING MOST NEEDED TO DEVELOP AGRICULTURAL ECONOMICS PROFESSION IN LDCs OVER NEXT 5-10 YEARS

Level of Training Needed	MDAE % Who Indicated		LDAE % Who Indicated	
	1st Need	1st and 2nd Need	1st Need	1st and 2nd Need
B.S.	25	36	38	51
M.S.	22	49	31	63
Ph.D.	30	47	18	32
Nondegree	19	41	10	33

LDC alumni see a need for additional training at all levels--B.S., M.S., Ph.D., and special nondegree training--as a means of meeting training needs over the next five to ten years. The ranking of training needs varied by regions. Asians gave highest priority to Ph.D. training to further develop their agricultural economics profession, but this subsample was heavily weighted by responses from India. Alumni from Africa, the Middle East, and Latin America gave higher priorities to B.S., M.S., and nondegree training.

When respondents were asked what critical inputs were needed to achieve the training levels indicated, over 40 percent said more well-trained staff was most important for all types of training. Infrastructure, more funds, and better government support each accounted for 20 percent of the responses. More research and curriculum development made up 10 percent and miscellaneous responses the rest. On the basis of these responses, adequate staffing is clearly the most important limiting factor.

Major Problems Facing LDC Agricultural Economics Professions

There is a great shortage of trained professionals to staff teaching and research programs in most of the LDCs. Countries like Nepal and Guatemala do not have the critical mass of professionals needed to institutionalize graduate-training programs. In Colombia many have been trained and two graduate programs were started, but the profession has been unable to establish sufficient credibility to support itself from national sources. Agricultural economics is presently not taken very seriously as a profession in any of these countries.

Kenya and Tanzania have reasonably creditable M.S. programs, but they are staffed largely with expatriates. There is generally good public support but too few trained nationals, especially Ph.D.s, to give adequate national leadership. Graduate programs lack continuity because of high staff turnover. In Tanzania it is difficult to find enough students to train, yet the demand for agricultural economists appears strong. There are just too few young people coming up through the educational system to meet all the trained-manpower needs.

India and Brazil both have substantial graduate training and research capabilities in agricultural economics and can produce all the M.S. professionals they need in their own institutions. In India the profession is better established and has more agricultural economists than any other LDC. Many have been trained outside the country, and there has also been a substantial outmigration of capable professionals. Major concerns are that agricultural economics is still a neglected field and does not attract enough bright young people. The profession seems to have stagnated and lacks incentives to be more productive even though the needs are great.

In Brazil, the profession has strong public support and is more vital than in India. Graduate training and research are in the process of consolidation. High salaries outside the universities have made it difficult to hold trained staff. Existing graduate programs need to be strengthened with more Ph.D.s. The agricultural economics content of undergraduate programs needs to be expanded. There is an expressed concern about the lack of leadership in the profession and the need to expand the role of the professional association. Agricultural economists are too isolated in Brazil in the sense that there is too little public dialogue and peer interaction among professionals on national issues of concern to agricultural economics. Consequently, there has been too little incentive to do the serious research needed for public-policy formation and strengthening of the profession itself.[4]

Agricultural economists in all the LDCs contacted felt some isolation from the ongoing stream of the profession in the U.S. and other developed countries. Exchange programs, joint research, postdoctorals, visiting professorships,

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[4]In addition to the Fox report on Brazil, information has also been drawn from "Higher Education Programs in Agricultural Economics and Rural Sociology in Brazil," Report No. 85, MSU/MEC Project (December 1977).

seminars, and other network-type activities are all welcome possibilities to increase communication and strengthen professional ties.

LDC alumni and their employers contacted during the individual country studies saw a continuing need for Ph.D.-level training in the U.S. and other developed countries for a carefully selected group that have demonstrated a high level of ability and a commitment to the needs of their own countries. But there is a strong feeling that B.S.- and M.S.-level training should be provided locally. The LDC alumni indicated that the resources needed to do this are, first and foremost, an expanded faculty resource to be complemented with facilities and adequate support funding assured by a stable government commitment.

Inputs U.S. Can Provide to LDC Professions

In both the mail survey of alumni and the in-country studies, questions were asked concerning the role that U.S. agricultural economists and institutions could perform in helping with the development of the agricultural economics profession in less-developed countries. Results of the mail survey are presented first and are followed by an integrated summary from the survey results obtained in the nine LDCs.

Responses in the mail survey seemed to emphasize collaboration in the area of training LDC personnel in the technical and theoretical aspects of agricultural economics. Most respondents failed to elaborate on their responses and dealt with the question by submitting lists of course areas needed. Such responses perhaps were meant to indicate areas in which local teaching institutions were weak and could use some strengthening. These course-work areas included all the subjects usually taught in agricultural economics departments. In this connection, the exchange of professors was often suggested, as opposed to a one-sided transfer of U.S. professors to LDCs. No doubt this was a way these LDC professionals felt that the more common, client-patron relationship of the past between U.S. and LDC universities could be reworked into a more forward-looking relationship among colleague institutions. One respondent suggested the possibility of joint appointments of professors to both a U.S. and an LDC faculty of agricultural economics.

Another major area of suggested collaboration was in institution-building activities. Respondents remarked that U.S. professionals could collaborate in strengthening LDC departments of agricultural economics. Some stated they felt that their departments were ineffective or outdated and needed some

revitalizing. Others commented on fledgling departments that could use the experience of seasoned professionals to help nurture and direct their progress towards maturation. Specific ways to go about helping in this work of institution building were also suggested. Examples included collaboration in, first, setting up agricultural economics curricula, nondegree training programs, and extension programs; and, second, assistance in organizing regional agricultural economics professional associations, journals, teaching materials, and resource centers.

More collaboration in research was a frequently mentioned area in which a partnership with U.S. professionals would be especially welcomed. There was an expressed need to put local research capabilities to more effective use. Joint research projects were often suggested. Respondents stated that U.S. professionals could be helpful in assisting in the establishment of reliable local agencies responsible for collecting and updating useful data for research. Finally, respondents frequently stated that more research funds are necessary. None of the respondents, however, suggested how U.S. professionals could collaborate with LDC institutions in raising such funds. Perhaps U.S. professors who have had experience in writing grant proposals and securing research funds could work with colleagues in LDC universities who are less experienced in this area.

Computer technology is another area in which strengthening of indigenous capacity could be enhanced through the participation of U.S. professionals. The profession in LDCs is attempting to initiate, expand, or update computer operations. The expertise of agricultural economists experienced in these matters would be a valuable resource for such activities. Computer programming skills, software packages, and computer center management are specific areas in which U.S. professionals could provide an important input into LDC research and policy analysis efforts.

Project evaluation and implementation was a frequently mentioned interest that attests to the importance of development projects in the LDCs. Additional expertise and manpower are needed in devising, initiating, and appraising such projects. U.S. professionals are in considerable demand in certain LDCs because of the lack of locally trained personnel for this type of work.

Respondents often spoke of the need to formalize the collaborative efforts of U.S. professionals in their countries. A preference for long-term relationships over short-term commitments was expressed. As a rule, respondents were not in favor of isolated exchanges of professors without follow-up exchange of additional faculty.

Very few respondents stated that U.S. professionals could not productively collaborate with the agricultural economics profession in their countries. When such statements were made, they usually came from respondents from countries in which such collaboration would be obviously impossible at present because of current political realities (i.e., such countries as Cambodia, Argentina, and Vietnam). The general tenor of most responses to this part of the questionnaire was positive; more collaboration with U.S. professionals was spoken of as a potentially productive and useful venture.

Results of the responses to this question in the mail survey are broken down between MDAE and LDAE countries and are summarized in Table 3.3. The

TABLE 3.3 -- RESPONSES OF LDC PROFESSIONALS ABOUT COLLABORATION WITH U.S. AGRICULTURAL ECONOMISTS THAT CAN HELP BUILD LOCAL PROFESSION

	MDAE Countries %	LDAE Countries %
Teaching and Training	54.3	57.7
General Assistance	9.3	8.6
Economic Theory	2.1	.9
Resource Economics	4.3	3.5
Farm Mgt. & Production Economics	5.8	9.1
Marketing	10.3	10.0
Credit	1.0	3.2
Development and Trade	4.7	3.5
Planning and Policy Analysis	5.8	4.7
Quantitative Methods	7.7	8.9
Research Methodology	3.1	5.3
Institution Building	20.6	20.4
General	1.0	2.7
Curriculum and Other Prof.	5.2	6.8
Linkages and Exchange	14.4	10.9
Research Capacity	19.8	17.1
General	4.9	5.0
Project Development & Evaluation	6.8	7.1
Collaborative Research	8.0	5.0
Other Collaboration	4.9	4.4
Little or Nothing	.4	.3
TOTAL	100.0	100.0

only response rates that differed by more than 3 percent between MDAE and LDAE respondents in connection with the question of how U.S. professionals can collaborate in building LDC agricultural economics institutions were in the cases of (1) training in production and farm management, (2) linkages and exchanges between U.S. and LDC agricultural economics institutions, and (3) collaboration in research. The first item was most frequently mentioned by LDAE respondents and the last two by MDAE respondents.

The individual country studies provided an opportunity to explore in greater depth the question of U.S. cooperation. Some typical and more insightful comments on potential U.S. collaboration follow:

> Teaching and research, especially exchange programs. Many young agricultural economists in Nigeria are so busy that they cannot take sabbatic. But if they are on exchange it will be easier. The research plans tend to be narrow and small due to lack of funds and experience. Joint efforts may improve the outlook. (University of Ibadan, Nigeria)

> Scholarships or fellowships by U.S. universities, especially for short courses in research techniques, project evaluation, and systems analysis to agricultural economists from my country or short visits of U.S. agricultural economists for short courses in my country could be of much help to the agricultural economics profession here. (Cyprus Government)

> There is scope to strengthen the curriculum in the various universities with departments of agricultural economics. Given the complexity of local politics, however, this is easier said than done. (Rubber Research Institute of Malaysia)

> Translation of teaching materials is essential. American professors to teach in Spanish in areas such as: economic analysis applied to agricultural policy, quantitative methods, natural resource development, farm management, projection and prediction techniques, and analysis of agricultural markets and prices. (Universidad Autonoma Madrid, Spain)

> Research methods, technical-agronomic know-how, small farmer technological options, comparative agricultural development, and other country experiences--to counter the "modernistic," large-scale bias of agricultural planning in Brazil today. (University of Rio de Janeiro, Brazil)

> Developing programs of study in the U.S. and LDCs which may allow the graduate students a knowledge of different schools of thought and the analysis of problems from different points of view. Classical and neoclassical economics can be applied with success to some problems but it is insufficient or completely inadequate for others. (IAAS, Argentina)

Supply of senior teaching staff and research grants. (University of Yaounde, Cameroon)

The most useful would be in the development of "research training" programs. The students in LDCs need to know how to carry out research programs and to appreciate the objectives of these projects. (University Federal de Vicosa, Brazil)

Joint research efforts on problems in LDCs. Ideally the U.S. professor should be a resident in Malaysia on some contract with our university. Leadership in research is badly needed in my country. (University of Agriculture, Malaysia)

Research and extension areas would be most useful without neglecting, however, the agricultural statistics area since most research can't be conducted because of the lack of accurate data. (Department of Agriculture, Zaire)

The design and implementation of effective rural development projects based on income-generating agricultural and related productive projects. Here both manpower and funds are substantial constraints. Strengthening the economic development planning machinery. It is too weak at present. (Makerere University, Uganda)

If I were in a position to make decisions, I would request for the former two-way ties of Nigerian and U.S. universities. This would encourage the flow of knowledge through visits (3-5 years) of experienced agricultural economists to Nigerian universities. The major problem is that an American specialist does not remain long in any Nigerian universities to help develop the type of personnel needed for research and training experience. Short-term contracts are bad. (Agricultural Officer, Ministry of Agriculture, Nigeria)

An affiliation of home institutions to one or more U.S. institutions. Initially train people locally to Master's level and proceed to the U.S. for Ph.D. Home country research should be emphasized. Offer graduate fellowships to people in non-teaching institutions to be trained in the U.S. to the Ph.D. level. It is at the Ph.D. level that people mature into professional agricultural economists who can conceptualize problems and direct courses of action to solve them. (Ministry of Agriculture, Ghana)

Financing is one problem in strengthening the agricultural economics profession in the Philippines. At present the Central Mindanao University (with two Ph.D. degree holders and four M.S. degree holders in Agricultural Economics and Agribusiness) is ready to offer a graduate program in the M.S. level if funds could be available. (Central Mindanao University, the Philippines)

In summary, LDC professionals have a very positive attitude toward more collaboration with U.S. agricultural economists. The results of the mail survey were combined with the country studies to provide the following major conclusions.

1. There is a continued need for selective Ph.D.-level training in the U.S. and other developed countries for all LDCs. Even a country like India with its own doctoral programs wants to keep some U.S.-trained Ph.D.s flowing into the professional mix. Most LDCs have no doctoral-training capabilities, and the rest have extremely limited capabilities for Ph.D. training. Ph.D.s are greatly needed to staff academic programs and to guide and conduct research.

2. Some M.S. training of LDC professionals needs to continue in the United States, specifically from those countries without their own training capabilities. Third-country training should be utilized whenever possible. Various types of technical assistance are needed to strengthen indigenous LDC Master's programs.

3. Joint degrees and shared thesis advising should become a growing dimension of the collaborative relationships between LDC and U.S. universities. U.S. course work can provide needed background in theory, quantitative analysis, and research methodology. LDC course work can give a greater understanding of local development problems and institutions. The combination of course work can then be drawn upon in planning and conducting thesis research. In some instances, thesis advising may be shared by professors from both LDC and U.S. universities.

4. Joint research projects can extend the collaborative arrangements linking the LDC and U.S. universities but usually require considerable initiative to arrange and finance. International funding agencies are showing greater interest in collaborative research programs.

5. Short courses, seminars, and workshops should be given greater emphasis in a comprehensive strategy for professional development. These can be planned and carried out with LDC institutions collaborating with U.S. university faculty and international development agencies.

6. Postdoctoral sabbaticals in the U.S. should be considered for LDC professionals who have at least five years of active experience in their home universities or research institutes after completing their doctoral studies. These awards should be reserved for outstanding young professionals with a serious commitment to continued teaching and research in their own countries. In countries like India, Brazil, Egypt, and Nigeria, where the profession is reasonably well developed, there is a great need for more mature leadership to help define national policy issues, set research priorities, and give guidance to graduate training.

7. Professional associations are an important complement to developing strong professions of agricultural economics in the countries surveyed. They can do much to promote greater communication and interaction among professionals and help alleviate problems of isolation. National meetings, workshops, seminars, and publication of a journal are some principal means used to facilitate peer review and professional development.

CHAPTER 4

U.S. RESPONSE TO LDC PROFESSIONAL DEVELOPMENT NEEDS IN AGRICULTURAL ECONOMICS

LDC demand for U.S. graduate training in agricultural economics has continued to increase through the 1970s, but the support for U.S. university-based staff interested in development has declined. Young U.S. agricultural economists get little encouragement from many universities to work in international agriculture and to participate in overseas assignments. There is now a general sense of frustration in the U.S. academic community about how to maintain professional competencies in international development and to serve the needs of LDC students.

In response to this situation, a major objective of the AAEA study was to assess the extent of involvement, problems, and ways to increase the participation of young U.S. professionals in development work. A mail survey was conducted with Ph.D. holders from the United States who had received their degrees in the past ten years and who had a major interest in the economics of agricultural development at the time of their graduation.[1] This group was selected because it is the generation of U.S. professionals who will be called on to provide most of the leadership and expertise needed in international agricultural development over the next ten to twenty years. Therefore, their views and involvement in development activities are critical for the future of U.S. capabilities to work with LDCs on their development problems.

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[1]For a more complete report on this survey, see Larry Senger, "Evaluation of Opportunities and Problems Encountered by Young U.S. Professionals Seeking Career Involvement in the Economics of Agricultural Development," Staff Paper No. 79-65 (Michigan State University: Department of Agricultural Economics, August 1979).

Profile of Young U.S. Professionals

The information that follows is based on responses from 108 U.S. professionals who returned the mail questionnaire. This group represents 56 percent of the estimated 193 questionnaires that were received from the survey group. All respondents were men whose ages ranged from 28 to 54 and averaged 39.5 years. As a group, they had received doctorates from 24 U.S. universities, although 56 percent of all respondents earned their degrees at six of these universities. Over 75 percent majored in agricultural economics, but the remaining 25 percent listed economics or fields within agricultural economics as their major area of study for the Ph.D. Over two-thirds considered development as their area of specialization either by itself or in combination with another subject-matter area.

All but eight respondents reported some competency in at least one foreign language. Over half the total group considered themselves fluent in a foreign language, with over a fourth fluent in Spanish, 12 percent in Portuguese, and less than 5 percent in French. Nearly three-fourths of the group claiming foreign language skills had developed those capabilities before completing their Ph.D.s. Over a fourth had Peace Corps experience during which they had learned a foreign language.

As indicated by their language capabilities, young U.S. professionals have gained most of their overseas experience in South and Central America. Next in importance is South and Southeast Asia. More limited numbers have had experience in Africa and other regions of the less-developed world. These distributions, as presented in Table 4.1, provide an indication of which competencies in development exist in terms of experience and language capabilities.

Current Employment and Involvement in Development

U.S. universities provide the main source of employment for the survey group of younger U.S. agricultural economists who prepared for careers in international agricultural development.

As indicated in Table 4.2, over half of the younger professionals work for U.S. universities; employers of the next largest group are international development agencies with 25 percent of the total. The international agricultural research centers as a group are by far the largest employer within this group. AID employs relatively few young Ph.D. agricultural economists not only in

TABLE 4.1 -- OVERSEAS EXPERIENCE OF U.S. PROFESSIONALS

Location	1st Most Experience		2nd Most Experience		Sum of 1st & 2nd		Some Experience	
	No.	%	No.	%	No.	%	No.	%
South America	30	27.8	11	10.2	41	38.0	60	55.6
Central America & Caribbean	15	13.9	22	20.4	37	34.3	56	51.9
So. & SE Asia	22	20.4	7	6.5	27	25.0	46	42.6
West Africa	8	7.4	8	7.4	16	14.8	30	27.8
East Africa	8	7.4	5	4.6	13	12.0	29	26.9
East Asia	0	-	5	4.6	7	6.5	13	12.0
Middle East	2	1.9	1	.9	3	2.8	11	10.2
North Africa	2	1.9	1	.9	3	2.8	10	9.3
South Africa	0	-	2	1.9	2	1.9	4	3.7
Oceania	1	.9	0	-	1	.9	1	.9

absolute numbers but especially in relating to the need for analytical and program development capability. The U.S. government agencies, including the State Department and USDA, are also surprisingly limited sources of employment, with less than 10 percent of the total sample. Also, very few are employed in the private sector.

These employment percentages are not drastically different from the job-preference patterns that respondents had at the time of their Ph.D. studies. University teaching and research was the first choice of 53 percent, whereas 34 percent indicated international agencies as their first choice. These were also the most popular second-choice careers. Less than 3 percent indicated their first-choice careers were to be researchers for government and project planners and analysts in government agencies, but these were cited as second or third choices 30 percent or more of the time (see Appendix I). The basic difference between desires or expectations and current reality is that apparently fewer career opportunities exist in international agencies than were expected. Meanwhile, preferences may also have changed.

TABLE 4.2 -- EMPLOYERS OF U.S. PROFESSIONALS

Type of Employer	Number	Percentage
University		
U.S. University	58	53.6
DC University	2	1.9
LDC University	1	.9
Subtotal	61	56.4
International Agency		
USAID	7	6.5
U.S. Foundations, ADC	6	5.5
World Bank, IDB	3	2.8
International Research Centers	11	10.2
Subtotal	27	25.0
Government		
USDA	7	6.5
Other State/Federal Government	3	2.7
DC Government	2	1.9
LDC Government	2	1.9
Subtotal	14	13.0
Private Sector		
Private Business	4	3.7
Consulting Firms	2	1.9
Subtotal	6	5.6
TOTAL	108	100.0

Although approximately the same percentage that wanted to work for U.S. universities (53 percent) actually do, the majority of this group have not been able to pursue development careers in the U.S. university system to the extent that they would like. Thirty of the 58 employed by U.S. universities indicated that they were no longer working in development. An additional 13 who were no longer in development work are employed by the federal government, private enterprise, local and state institutions, and domestic research centers.

Overall, 43 professionals, or 40 percent of the total sample, no longer work in development, and the great majority of these are employed in U.S. universities. Although only four of the total group felt that the development orientation of their training had hindered their careers, the total responses do indicate a high rate of desertion from development work in universities. It should be noted, however, that throughout the 1970s there has been a relatively strong demand for young agricultural economists to fill domestically oriented university positions in teaching, research, and extension.

There are problems for young professionals who continue to work in development in U.S. universities, for many must maintain both a domestic and international track. At the same time, others who work totally in development are having difficulties in securing tenure-track positions. As long as the domestic market for agricultural economists continues to be favorable, personal career adjustments should not be too difficult for those who prepare to work in development but leave, especially if they leave within a few years after receiving their Ph.D.s. The major problem appears to be one of insufficient opportunities for professionals in jobs that offer career potentials in international agricultural development, especially in U.S. universities. For the profession as a whole, there is a serious concern about who will do the research and provide the training in the U.S. universities that LDC students continue to demand. The U.S. is also in danger of losing the expertise needed to provide the technical assistance likely to be demanded by LDC governments and international development agencies over the next ten to twenty years.

Problems with Careers in Development

When young U.S. professionals in agricultural economics were asked if they were deserting their interests in development, 62 percent of those questioned said yes, 20 percent responded no, and 18 percent said that they did not know. The frequency of the affirmative answer indicates that some problems do exist. This situation is especially disturbing since 47 percent of the respondents believe that opportunities to do development work are growing. This response suggests that young professionals who are capable of doing good work in this field are foregoing development work opportunities because of the drawbacks and professional disadvantages associated with it.

When the young professionals were asked why they were deserting their international development interests, most of their answers related to problems

of job insecurity and working conditions. Over 76 percent felt that the lack of development-related jobs in the tenure system was a principal reason; 51 percent indicated lack of support for development work in agricultural economics departments; and 40 percent said there were poor promotion and advancement opportunities. Lack of research money in development is a related reason since promotion and tenure normally depend on publication output. Other reasons for not working in development are of a more personal or family nature. Table 4.3 lists the reasons respondents gave for leaving international development work.

TABLE 4.3 -- REASONS THAT YOUNG PROFESSIONALS ARE DESERTING THEIR INTERESTS IN DEVELOPMENT[a]

Reason	%
Lack of development-related appointments in tenure system	76
No support from agricultural economics departments	51
Little, if any, research money available	46
Family reasons	43
Poor promotion or advancement opportunities	40
Too much traveling and moving around	31
Growing unpopularity of the USA in LDCs	27
Frustrating nature of development work	27

[a]Percentages are based on the number who responded yes to a series of reasons listed in the questionnaire.

The most frequently mentioned problems are those related to university positions. These problems were often mentioned again by respondents in the final question of the survey in which they were asked for any additional comments on the role, problems, and/or opportunities for U.S. professionals in development. Here it was frequently mentioned that their agricultural economics departments do not generally recognize the value of overseas development activities and/or do not provide adequate financial support. As a result, those interested in development must often pursue this interest on their own time and as a consequence find themselves in the difficult position of having to juggle two almost separate components of their careers. The situation is further complicated in that work in development frequently requires overseas travel, which is

difficult to arrange when the professional is heavily involved in on-campus teaching and other duties.

A further problem related to achieving tenure in a university position is that the results of much work in development are not easily adapted to publication in discipline-oriented journals. Meanwhile, the current emphasis in development assistance is away from research and toward activities connected with project planning, evaluation, and implementation. Much of the demand is for short-term technical planning or other advisory services to be delivered overseas. Opportunities are extremely limited for U.S. professionals to do research overseas or on their home campuses.

These problems have existed for many years, but they have become more severe in recent times. Lawrence Witt discussed the lack of recognition for overseas work in an AJAE article published in 1959. Subsequent articles dealt with the "isolation effect" of overseas work and the importance of promotions and adequate salary adjustments for those involved in overseas work.[2]

There are also problems for administrators when faculty participate in overseas activities. Funding and the maintenance of domestic programs are two major concerns. Staff development can be a risky enterprise when only "soft" money is available, and domestic programs can suffer when a staff member with major domestic responsibilities goes overseas for two years, especially in relatively small departments. These difficulties have been expressed as follows:

> But domestic educational institutions are discouraged from enthusiastically participating in this human capital formation process. If the prospect is one of losing the mature scholar after holding his position open for two or three years, to release a man is to disrupt and weaken domestic programs. Idealogically, universities support the objectives of U.S. AID programs. Operationally, the problems of practical involvement are enormous.[3]

> In too many instances the department head's primary role has been that of solving, as best he could, the problems of personnel and domestic programs created by the departure of one or more of his

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[2]Lawrence Witt, "Towards an International Dimension in Agricultural Economics," AJAE 41 (May 1959): 211-20; Sherwood O. Berg, "International Opportunities for American Land-Grant Universities," AJAE 43 (December 1961): 1056-63; Harold D. Guither and W. N. Thompson, "Agricultural Economists in Overseas Development Assistance and the Impact Upon U.S. Universities," AJAE 50 (December 1968): 1313-25.

[3]Lowell S. Hardin, "Potential Growth Areas in Agricultural Economics," AJAE 45 (December 1963): 939-51.

staff members for an overseas assignment. A part of this responsibility was protecting a position for the staff member upon his return at some indefinite time....As a result of staff members' being involved in AID contract projects, universities incur substantial costs in terms of less satisfactory performance of domestic work. Present funding of contract work on a year-to-year basis does not permit the department to add long-term personnel to strengthen its international competence without seriously impairing the work oriented primarily towards domestic needs.[4]

Role of U.S. Agricultural Economists in Helping Meet LDC Development Needs

A series of questions was asked of the mail survey respondents about the greatest needs LDCs face in development of their agricultural sectors, in what kinds of activities U.S. agricultural economists can provide the most productive assistance, and finally what activities are of most interest to each respondent who would like to expand his participation in development. The intent of these questions was to observe the relationship between perceived LDC needs and U.S. interests and capabilities to provide assistance.

Two LDC development needs that were rated as most important were internal political stability and better government support for agricultural development. However, outside assistance can probably do little in the short run to affect these conditions. Other important needs that were identified included (1) the development of appropriate technology, (2) more trained nationals in the agricultural sciences, and (3) more internal management capabilities. A second order of items, but still very important, included more indigenous agricultural economics capabilities, better extension programs, and improved physical infrastructure. Most of these items involve more research, training, and institution building, which must be conducted largely in LDCs but which could benefit from U.S. participation. (See Appendix J for a complete listing and ranking of responses.) Most LDCs still lack the professional and institutional capabilities to do all of their own training and to carry out the necessary research for effective development efforts.

Activities in which respondents felt that U.S. agricultural economists could be most productive included research and technical assistance overseas with an LDC government institution or with a technical-assistance agency. Teaching and

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[4]Guither and Thompson, pp. 1317, 1319.

advising foreign students in the U.S. or in an LDC university were also given high ratings. These responses indicate the importance of research and training--also that the best place to do this is overseas. (Detailed results are presented in Appendix K.)

Finally, those respondents who expressed an interest in expanding their involvement in international development were asked what activities would be of most interest to them. Joint research with LDC colleagues led the list with 43 percent indicating this as their first, second, or third choice. Next came a series of overseas involvements including short-term consulting (37 percent), one- to three-month technical-assistance assignments (35 percent), and one- to two-year assignments overseas (34 percent). Advising LDC students on their research and the preparation and monitoring of development projects were both checked by over 25 percent of the respondents (see Appendix L). Thus, it appears that opportunities to do development research with LDC colleagues and graduate students and to have continuing overseas experiences are important for U.S. professionals. In addition, they have noted the need for a more stable U.S. base and more equal opportunity to advance professionally if they expand their professional efforts in these areas.

What U.S. Universities and Development Agencies Should Do to Strengthen Their Contribution to International Agricultural Development

To a major extent, young U.S. professionals felt that their problems were institutional and that certain changes were needed in order to make international development careers more attractive. There was a related concern about what U.S. universities could do to strengthen their contribution to development in LDCs and to better accommodate students interested in this area. It is further recognized that what U.S. universities might like to do and what they are able to do may be different. Responses to this question are given in Table 4.4.

Over 50 percent of the young professionals felt that universities should respond in three major areas: (1) encourage more student and faculty exchange, (2) provide more research opportunities in development fields, and (3) create professorships in international agriculture. Other suggestions related to the courses and other training offered by U.S. universities. It is interesting to note that considerably more importance is given to integrating development concepts and application into existing courses rather than to offering more courses.

TABLE 4.4 -- SUGGESTIONS ABOUT WHAT U.S. UNIVERSITIES SHOULD DO TO STRENGTHEN THEIR CONTRIBUTION TO INTERNATIONAL AGRICULTURAL DEVELOPMENT

Suggestion	%
Encourage more exchange of students and faculty	69
Provide more research opportunities in development fields	69
Create professorships in international agriculture	53
Integrate the topic of development into already existing courses	38
Offer more courses on the topic of development	26
Offer informal seminars with guest lecturers	21
Encourage faculty to take part in development work	10

Over two-thirds would like to have more exchange of faculty and students. Up to now, exchanges have largely been one way. LDC students come to the U.S. to study, but there are very few opportunities for U.S. students to get study and work experience overseas during their graduate programs. Only in relatively few cases are U.S. students given the financial support to gather data overseas for Ph.D. dissertations. U.S. professors have opportunities to work in LDC institutions under some development projects, but LDC professionals have practically no chance to return to U.S. universities to teach and carry out joint research with U.S. colleagues.

Creation of professorships in international development and the provision of more research money in this area are two very important suggestions for strengthening the international dimension in U.S. universities and for halting the "brain drain" of young professionals away from careers in international development. Lowell Hardin has spoken of "international service career opportunities." Guither and Thompson suggested a corps of career development specialists within the university system who "would not have to pay the professional price now associated with 'leaves of absence.'" These suggestions are comparable to the concept of professorships in international agriculture that have been established at Cornell University.

Obtaining more financial support for university-based research is another major recommendation. This is seen as a means to facilitate joint research projects between U.S. and LDC professionals. Grants that would provide partial

salary support for U.S. university professionals would enable them to produce the publications needed for promotion while contributing to the solution of important LDC problems.

The support of government and international agencies is of course vital to the future of young U.S. professionals in development. These entities provide most of the financial support for work in development to U.S. professionals both directly and indirectly through the U.S. university system. What the respondents felt these agencies could do to further increase participation of young U.S. professionals in international development work is presented in Appendix M. Provision of more jobs and particularly long-term career opportunities received major emphasis. Equal emphasis was placed on the need for more funds for universities to encourage greater participation in development assistance programs and on career opportunities. Research in LDCs was also important in the list of topics relating to more financial support.

Some additional comments were offered in response to an open-ended question at the end of the questionnaire. These responses provided some important comments on the role of development agencies and the policy orientation behind many development projects. There was a concern that projects are too capital intensive and oriented toward profit maximization with little attention given to social issues and the needs of the local population. Projects tend to be too large and are not sufficiently related to the needs of the poor farmers they are supposed to benefit. Smaller projects involving farmer participation in the planning and implementation stages were considered to be more effective. Another criticism was that many agencies are insensitive to local political realities, which in the final analysis become critical determinants of success or failure.

Needed Institutional Changes

This study has shown that over the past decade a substantial number of U.S. agricultural economists prepared themselves for professional careers in the area of international development. Many have found employment in which their knowledge and skills are being effectively utilized. There are others who have been unable to pursue their international career interests, especially as tenure-system university faculty members. Meanwhile, there appears to be a continuing strong demand for both short- and long-term participation of qualified agricultural economists in LDC projects funded by international agencies and LDC

governments. At the same time, university departments of agricultural economics are increasingly faced with the replacement of retiring senior faculty who have provided leadership for the training of LDC graduate students and the management of overseas project activities.

The fundamental problem as perceived by publicly-supported U.S. universities is that there has not been a source of dependable long-term financial support for international development work comparable to the traditional state and federal appropriated funds that support more domestically based programs. Under these conditions, there has been an unwillingness among universities to create tenure-system positions based upon "soft" international contract monies. This unwillingness on the part of university administrators has been reinforced by increasingly inflexible and restrictive procedures for administering budgets and managing personnel.

Universities continue to look toward the federal government as the primary source of funding for international development work. The Title XII strengthening grant has been seen as a step in the right direction. The Collaborative Research Support Program also has a potential for bringing greater stability to university participation in international development research.

Several chairmen of U.S. departments of agricultural economics who have met to discuss the results of this AAEA-sponsored study seem convinced that the profession should place greater emphasis on strengthening the international content of the training programs for all graduate students, not just those from LDCs. The rationale is that in the next two decades all professional agricultural economists will need to be well versed in the workings of an internationally linked food system and in disciplinary research taking place in many locations around the world. In this context, a case may be made for financial support from state sources for research and education relevant to international issues.

Institutional changes to strengthen the capacity of the U.S. agricultural economics profession work in international agricultural development problems will be further considered in Chapter 5.

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A 1973-74 review, cited earlier, by the International Committee of the American Agricultural Economics Association provided a thoughtful assessment of objectives and ways to improve U.S. contributions to the training of professionals for work on the problems of less-developed countries. A 1978-79 study was undertaken to further assess the role of the U.S. agricultural economics profession in training and related research in the economics of international agricultural development. Data and related information were obtained through mail surveys of both LDC and U.S. professionals who received their graduate training in U.S. universities. The survey information was supplemented by personal interviews with selected agricultural economists and their employers in nine less-developed countries. Concurrently, Russell Stevenson of the Agricultural Development Council assembled data on the flow of foreign students into U.S. university graduate programs in agricultural economics over a recent nine-year period.

The information from the various survey activities was reviewed and discussed at an ADC-sponsored workshop at Michigan State University in June 1979. Twenty-three professionals representing U.S. universities and international agencies participated in the workshop. A symposium session at the 1979 AAEA meetings in Pullman, Washington, and a workshop group at the 1979 International Conference of Agricultural Economists in Banff, Canada, contributed ideas and views on ways to improve the training of agricultural economists and to build professional capacities to meet future needs. Seminars with chairmen of agricultural economics departments in the Western and North Central Regions and with AID staff have provided additional opportunities to evaluate the results of the surveys and to develop a set of conclusions and recommendations. (See Appendices N, O, and P.)

Summary and Conclusions

Flow of LDC Students to U.S. Universities

Students from the LDCs represented 30 percent of the total new entrants into 55 U.S. university graduate programs in agricultural economics over the period 1969-77. LDC admissions were 20 percent greater during the four-year period 1974-77 as compared to 1969-72. Increases in admissions were largely from Africa and the Middle East, although the largest absolute numbers continued to come from Asia and Latin America. Financial support for LDC students has shifted away from U.S. sources. More than one-half of the students received most of their financial support from non-U.S. sources in the most recent four-year period for which data are available (1974-77).

Location and Employment of LDC Alumni

Eighty-two percent of the 574 survey respondents were still living and working in their native regions, but the percentage ranged from 73 percent in Asia to 85 percent in Africa and 90 percent in Latin America. Alumni with Ph.D.s were more likely to be working outside their home countries than those holding M.S. degrees.

LDC alumni are generally working in jobs for which they were trained. Over 40 percent hold university positions, nearly 40 percent work in government, 10 percent are in private businesses, and 10 percent work for international agencies and foundations. About 30 percent are holding administrative positions, many with high-level responsibilities in government and in universities.

Evaluation of U.S. Training

U.S. graduate training in agricultural economics is highly regarded by LDC alumni and their employers. Major strengths of U.S. training that were emphasized included the following:

1. Comprehensive training in theory and quantitative methods, which provided good analytical skills
2. Training that developed confidence in problem-solving capabilities
3. Flexible programs that provided opportunities for breadth and depth of training
4. Good student-faculty interaction
5. Favorable infrastructure for learning and research

Weaknesses in U.S. training that were identified included the following:

1. Insufficient attention to political, social, and institutional factors in development
2. Lack of application of theory and research methods to LDC problems
3. The need for better appreciation of shortcomings of traditional economic theory as well as its strengths for conceptual and analytical purposes
4. Too little emphasis on problems of income distribution and other equity issues
5. More emphasis needed on practical aspects of primary data collection and analysis, project evaluation, agricultural planning, policy analysis, and public administration

LDC alumni strongly favored the retention of the thesis requirement for the M.S. degree, especially for students for whom the M.S. is likely to be a terminal degree. There was clear preference for both M.S. and Ph.D. thesis work on LDC problems. A majority of alumni with Ph.D. degrees recommended field research in the home country with final analysis, writing, and defense of the thesis at the U.S. university.

Three-fourths of the LDC alumni indicated that their U.S. training had been "extremely useful" in the development of their professional careers. However, some respondents also said that the long absence from their countries had created reentry problems. Overall, respondents were highly positive about the effect of their U.S. training on their career development.

Status of Agricultural Economics in the LDCs

Agricultural economics is a relatively new area of professional specialization in less-developed countries. The traditional professions such as law, medicine, and engineering are typically better developed and more prestigious than those in agriculture. Within agriculture, professional groups in the plant and animal sciences tend to be better established than those in agricultural economics.

Among the four regions studied, Asia currently has the greatest institutional capacity for training agricultural economists. Countries such as Japan, India, the Philippines, Thailand, South Korea, Taiwan, and Malaysia have established graduate-level training programs and now have a growing number of professionals.

The profession of agricultural economics is still very new in Africa, Nigeria having the most advanced group. Graduate training programs are emerging in Kenya, Ghana, and Tanzania.[1] Efforts are now being made to revive the graduate program that once existed in Uganda. In North Africa, Egypt has an established professional training capability, and progress has been made to establish graduate programs in Tunisia.

Although there are sizable numbers of trained agricultural economists in Latin American countries, significant institutional capabilities for graduate-level training currently exist only in Brazil, Chile, and Mexico. University graduate training programs that were developed in several other Latin American countries during the 1960s have either ceased or have become very weak.

Even in the countries with more-developed graduate training programs, local professionals often felt that the quality of training was relatively weak due to the continued scarcity of qualified faculty, teaching materials, facilities, and equipment. High faculty turnover occurs as professionals are attracted to higher paying positions in government or in international agencies.

U.S. Inputs Into LDC Professional Development

LDC alumni expressed positive attitudes towards continued collaborative assistance from U.S. agricultural economists as a means of strengthening professional capabilities within their own countries. However, there was concern that the form and substance of these assistance activities should be sensitive to the different levels of professional development and different needs among countries.

LDC alumni and their employers have expressed a desire for U.S. assistance and collaboration in the following areas:

1. Graduate and postgraduate training in U.S. universities.

   The greatest demand is for M.S.-level training for students from countries that do not yet have indigenous capabilities for graduate education. There is continued need for Ph.D.-level training for a few carefully selected candidates from all countries. In countries with growing indigenous graduate training capabilities, there is considerable interest in cooperative arrangements that might combine U.S. university coursework with

[1] H. U. Thimm, Postgraduate Training in Agricultural Economics in African Universities (Bonn, West Germany: German Foundation for International Development, 1976).

additional coursework and thesis research in an LDC university. There is also a keen interest in postdoctoral training or sabbaticals for talented young professionals who have worked in their own countries for at least five years after completing their doctorates.

2. Longer-term institutional linkages between LDC and U.S. university research and teaching units.

   In newly established LDC universities, formal institution-building programs are seen as a means to provide resident U.S. faculty assistance in curriculum building, the development of courses, teaching materials, and a related program in applied research. In countries that already have capabilities for undergraduate and Master's-level training, there is a desire for formal and informal linkages with U.S. universities to facilitate faculty exchange, joint supervision of both LDC and U.S. graduate student research, and other collaborative research activities on important LDC problems.

3. Professional networking arrangements are highly desired to facilitate information exchange and a wide range of collaborative efforts that provide informal linkages with U.S. and other agricultural economics professional groups.

   Participation in seminars, workshops, and meetings of professional associations provides valuable opportunities for professional interchange. LDC alumni put a high value on maintaining continuing contacts with the U.S. universities from which they received their graduate training.

Future Demand for U.S. Training of LDC Professional Agricultural Economists

Country-level studies indicated that the demand for the skills that can be provided by M.S.-level agricultural economists increases rapidly as economic development activities expand. The current demand for Ph.D.-level skills is limited primarily to high-level staff positions in government agencies, university faculties, and international development agencies.

The in-country assessments indicated a current effective demand and potential latent demands for professionally trained agricultural economists to perform services in five major areas:

1. Education and research, particularly at the university level
2. Development planning and policy analysis in government agencies

3. Organization, evaluation, and management of agricultural projects in governmental and parastatal agencies
4. Extension, both educators and administrators
5. The private sector as analysts, project organizers, managers, and as entrepreneurs

Many public-sector employers contacted in this study expressed a preference for locally trained M.S.-level professionals over those trained in the U.S., but, in many instances, locally trained professionals are not available. In countries where M.S.-level training capabilities have become established, the local governments and related international agencies have either reduced or terminated their scholarship support for M.S.-degree training abroad.

A substantial demand for M.S.-level agricultural economics training in U.S. universities will continue for at least two more decades from those countries that do not now have in-country training capabilities. The flow of Ph.D.-level students could continue for a longer period and from a much wider range of countries as a means of building and maintaining a needed human resource base in the LDCs. Whether this will occur depends upon future political alignments within the international community and on the educational priorities established by local governments and international agencies. In recent years, there has been a reduced commitment on the part of AID to support graduate degree training, relatively greater priority being given to nondegree, short-term training activities. Meanwhile, other international agencies and foundations have given increased priority to the support of in-country and within-region training. It should be recognized, however, that a U.S. graduate degree, especially from a prestigious university, is still a valuable and highly prized asset for the LDC professional. This strongly motivates many LDC students to seek opportunities for graduate study in the U.S.

Developing and Maintaining U.S. Professional Competence

During the 1950s and 1960s, significant numbers of U.S. university faculty acquired foreign experience through participation in institution building, research, and technical-assistance projects funded largely by AID and the internationally oriented foundations. This foreign experience was supplemented by continuing interactions with students from LDCs and contacts with foreign colleagues. However, opportunities for faculty participation in foreign-project activities declined during the 1970s. As older faculty with foreign experience

shifted into administrative roles, retired, or moved out of the university, a valuable resource base began to erode. This situation has developed in spite of the fact that over the previous decade a significant number of Ph.D. degrees have been granted to young U.S. professionals with strong interests in international development work.

The responses from a 1979 mail survey of 108 U.S. agricultural economists who obtained their Ph.D.s between 1968 and 1977 and who at the time they received their degrees had major career interests in international development revealed that 40 percent no longer work in development. Most of these individuals are employed by universities. Survey respondents attributed their shifting away from international development work to the lack of professional opportunities in either tenure-system university positions or longer-term career opportunities with international agencies. The lack of support for research on development problems, difficulties in obtaining recognition and rewards for development work, problems in coordinating campus and overseas activities, and family-related considerations were additional factors that young professionals cited for their declining involvement in international development activities.

The pool of young U.S. professional agricultural economists with international development skills does not appear to be large relative to potential needs. Yet this study suggested that even the existing talent is not being fully utilized and that several institutional constraints are discouraging young professionals from major career commitments to international development work. Probably the most critical underlying issue is the instability and low level of funding for university participation in international development activities. This coupled with increasingly stringent university budgets and the lack of citizen and congressional support for assistance to the less-developed countries has made it extremely difficult for university administrators to make long-term commitments to the recruitment and maintenance of permanent faculty who specialize in international development work.

Recommendations

The AAEA 1973-74 review of international training in agricultural economics anticipated a continued strong demand for U.S. graduate training of agricultural economists for work on LDC problems but a declining level of funding support for graduate training and research. In light of these conditions and perceived changes occurring in the LDCs, the authors of the report offered

recommendations stressing the need for greater flexibility in providing educational and research experiences for LDC students with continuing professional development activities to follow the completion of formal degree programs.[2] The results of the 1978-79 study generally confirmed the broad outlines of the 1973-74 assessments and recommendations.

The information of these two AAEA studies suggests that three broad goals should provide a general orientation for long-term commitments of the U.S. agricultural economics profession to international agricultural development. These goals are stated as follows:

1. To substantially increase LDC professional capacities to train agricultural economists at the M.S. level and to conduct research and related extension programs on agricultural and rural development problems.
2. To strengthen U.S. university faculty capabilities to train LDC and U.S. professionals for effective international development work.
3. To establish and maintain professional networks of LDC, U.S., and other developed-country agricultural economists that would facilitate collaborative programs of research, education, and public service.

Progress towards the achievement of these goals will require the efforts of many individuals acting in concert through the institutions that they represent. Specific recommendations are directed toward three institutional groups--U.S. universities, funding agencies, and the American Agricultural Economics Association.

U.S. Universities, Primarily Departments of Economics and Agricultural Economics With Major Commitments to Graduate Education in the Area of International Development

1. Review and adjust recruitment and graduate admission policies for students from LDCs.

   Applicant qualifications and career goals should be carefully assessed. Procedures should be developed that increase the probability of admitting students who will successfully complete the training program and return to their own countries for professional employment. At the M.S. level, admission priority should be given to students from countries that do not have in-country graduate-training programs.

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[2] Shertz, Stevenson, and Weisblat, Chapters I and IV.

The expectations and funding arrangements of sponsors should be carefully assessed to determine the adequacy of the support provided for the total program, including thesis research.

Consideration should also be given to availability of department faculty with experience in an applicant's country or region, and the willingness of the faculty to advise and supervise the student. The expressed interest of faculty and the department to develop a long-term program involvement in a country or region may also influence the admission decision.

2. Reexamine graduate programs in view of LDC alumni and employer assessments of the strengths and weaknesses of U.S. training as set forth in this report.

Although there was considerable satisfaction with the basic structure of U.S. degree programs, there was widespread support for more emphasis on applications of theory and empirical methods to LDC problems. This perspective can be developed if faculty members continue their involvement in international activities and if there is a critical mass of students and faculty with international interests and experience. Some special courses that alumni suggested should be offered include agricultural policy analysis and planning, project design and evaluation, primary data collection and analysis under LDC conditions, and program administration. U.S. departments of agricultural economics that have a limited demand for these more specialized courses may find it convenient to send students to special summer courses, offered at one or more locations for students assembled from several universities.

There are also those who hold the view that training should include some broadening courses to expose students to the concepts and problem-solving approaches of other social science disciplines. It must be recognized, however, that time and financial constraints will limit the number of specialized and broadening courses that can be incorporated into a degree program. Some of these topics should probably be relegated to postdegree short courses, special nondegree programs, and in-service training activities.

Most universities have established programs and procedures for assisting students who need additional training in English prior to entering regular, graduate-level courses. Policies and procedures are less well established to assist disadvantaged students from the less-developed countries who have

inadequate secondary school and college backgrounds in subjects such as mathematics and the basic sciences. One alternative is to refuse admission until minimum competencies are demonstrated. But other alternatives exist. For example, the Economics Institute at the University of Colorado offers remedial training in English, economics, and other basic subjects for students with differing levels of need. Michigan State University has undertaken a special Master's program for carefully selected students from the Sahelian region of West Africa. These types of programs are necessary to enable students from countries that currently have inadequately developed educational systems to successfully complete U.S. Master's degrees.

3. Increased offerings of nondegree specialized-training programs and short courses are needed to meet the demands of LDC governments, AID Missions, and other international agencies.

Many alumni from U.S. degree programs expressed a desire for opportunities to acquire additional skills relevant to advancement in their professional careers. In response to this demand, the Economic Development Institute of the World Bank, the AID/U.S. Department of Agriculture participant-training program, and the International Agricultural Research Centers have been conducting nondegree, short course-type training activities, including agricultural economics subjects. Increased participation of university-based faculty could expand the range of subjects covered and assist in the improvement of existing courses. Such efforts could be highly complementary with on-campus teaching and overseas collaborative research programs. This is an area that merits more active cooperation among U.S. universities and between these universities and LDC universities and with the international agencies now engaged in these types of training activities.

Some universities with major commitments to international development work are considering nondegree training options that would be of shorter duration than formal degree programs but that would substantially increase the competence of LDC professionals. A program of this type is being initiated at Colorado State University.

4. The thesis option for training LDC students should be used at the Master's level whenever possible.

If this is not possible, the student should be encouraged to prepare technical papers and/or a detailed proposal for a research activity that is relevant to a problem in his home country.

5. LDC students should conduct Ph.D. thesis work on a home-country problem and, when feasible, conduct in-country field research activities, followed by final writing and thesis defense in the U.S. university.

   In countries with sufficient professional staff and facilities, the field research and thesis preparation may be collaboratively supervised by U.S. faculty and LDC professionals at an LDC location.

6. Cooperative degree programs with universities in LDCs should be considered as a means of combining the basic coursework strength of a U.S. university with more applied courses and supervised thesis research on home-country problems.

   In this case, the degree should probably be granted by the LDC university. A jointly certified degree seems to be impractical under most conditions. It is not anticipated that cooperative degree programs will become a large part of the total U.S. involvement in training LDC students, but it may be viable when a relatively stable long-term relationship exists between the two institutions and when the LDC institution has an established faculty capability.

7. U.S. agricultural economics departments that want to train significant numbers of LDC students should attempt to maintain a small cadre of faculty with major long-term commitments in international development and to have a larger group of faculty with continuing involvement in international activities.

   The smaller group of faculty with major career interests in international development could provide leadership for international project activities and related recruitment and counseling of graduate students. The larger faculty contingent would have the usual subject-matter specialities but would develop and maintain their international competence through occasional participation in international projects and by supervising graduate student research on international development problems. In recruiting young faculty, departments should give careful consideration to candidates who have language skills and significant foreign experience in addition to basic qualifications for productive professional careers in a subject matter area. Over the longer run, departments should seek to develop faculties that have the international competence to serve a variety of needs in teaching, research, and extension. The achievement of this longer-term goal may require some adjustments in the evaluation of faculty involvement in

international activities with appropriate incentives and rewards for superior performance.

Funding Agencies

1. The U.S. bilateral development-assistance agencies should assign a much higher priority to professional training as a long-term human resource investment.

   This study has provided evidence that there is a critical and growing need for the services of professionally trained agricultural economists in nearly all LDCs. In a more general context, it is believed that the lack of indigenous professional capabilities in many fields continues to be one of the most serious limiting factors to the success of externally assisted development projects. Useful, short-term training activities have been incorporated into many projects, but in recent years investments in more basic, longer-term, degree-type training at the M.S. and Ph.D. levels has been relegated to a much lower priority.

   It is recommended that U.S. bilateral assistance give higher priority to long-term investments in building LDC institutional capabilities for training professional agricultural economists at the M.S. level and that there be continued support for degree training in U.S. universities.

2. The International Development Cooperation Agency (IDCA) should make a concerted effort to establish a more stable funding base for U.S. university participation in bilateral development-assistance activities.

   The evidence from this study is that the university faculty resource base for international development work in the field of agricultural economics is declining and will decline further unless there are more dependable sources of financial support upon which to make long-term faculty appointments. The Title XII programs through the university strengthening grants and the Collaborative Research Support Program should be reinforced and supplemented by administrative procedures that provide greater program stability and continuity.

3. International agencies and foundations should maintain small grants programs to provide research support for young professionals and to facilitate professional development through workshops and publications.

   Young U.S. professionals indicate that the lack of research support has forced many of them to desert their career interests in international

development. Carefully organized research workshops are also needed to stimulate and facilitate collaborative research involving both U.S. and LDC professionals. Relatively simple and flexible administrative procedures would enhance the effectiveness of small grants programs.

4. In the design of development projects including U.S. university participation, international agencies should give greater attention to staffing patterns that contribute to the expansion of the pool of professional expertise.

There is a relative scarcity of senior, experienced faculty to staff LDC projects. However, in many instances, the objectives of a project can be achieved while, at the same time, the project contributes to professional training goals. This requires a careful structuring of the project staff to include a combination of senior faculty, junior faculty, and graduate students from both U.S. and LDC universities or agencies. The opportunities for utilizing this approach to project staffing are greatest when applied research is being conducted as an input into a project design activity.

The American Agricultural Economics Association

1. The AAEA should encourage and assist in the development of professional agricultural economics associations in the LDCs.

Professional associations are an important complement to the development of strong professions in agricultural economics. They can do much to promote greater communication and interaction among professionals and to help alleviate problems of isolation. National meetings, workshops, seminars, and the publication of a journal are some principal means used to facilitate peer review and professional development.

Although an association can perform an important role in helping vitalize agricultural economics capabilities, it is seldom effective until a country has its own critical mass of professionals, including indigenous training and research programs. There must be a supportive membership and leaders who take responsibility for association activities. Adequate financing is often an additional problem, but the primary factor is leadership.

The AAEA, through its Executive Committee and International Committee, should collaborate with the International Association of Agricultural Economists in helping LDC professional groups organize national or multinational associations.

2. The AAEA Handbook Directory and the Employment Registry should be further developed to serve the needs of members with special interests in international development positions and short-term foreign assignments.

The 1976 Handbook Directory included information on the foreign language capabilities of members and their subject-matter specializations, including international economics. In preparing future handbooks, consideration should be given to including additional information on foreign experience by country or regions. This type of information should be provided in greater detail on the Employment Registry, especially for Association members who express an interest in being considered for short- and long-term international assignments.

Some Unresolved Issues and Challenges

Multidisciplinary Problem-Solving Activities

The surveys carried out in this study indicated very limited involvement of LDC agricultural economists, especially those in universities, in multidisciplinary problem-solving research, and in development activities. This was identified as an area of concern deserving considerable professional attention in the future. The recent efforts of the International Agricultural Research Centers to integrate agricultural economists into multidisciplinary teams along with physical and biological scientists are viewed as a positive step towards more effective work on agricultural production problems.[3] These efforts are now being expanded from single-commodity programs to more complex "farming systems" approaches to research and extension programming.[4] Increasing efforts to design and implement broad-based rural development programs within the LDCs have also created opportunities for agricultural economics inputs into multidisciplinary activities. Currently the AID-Title XII program is providing additional emphasis on broad-based agricultural production research to be carried out collaboratively by multidisciplinary teams of LDC and U.S. university professionals.

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[3]Lowell S. Hardin, "Emerging Roles of Agricultural Economists Working in International Research Institutes Such as IRRI and CIMMYT," International Conference of Agricultural Economists, Banff, Canada, September 3-12, 1979.

[4]Michael Collinson, "Micro-Level Accomplishments and Challenges for Agricultural Economists," International Conference of Agricultural Economists, Banff, Canada, September 3-12, 1979.

The pattern of increasing involvement of agricultural economists in multidisciplinary research and development work in both the U.S. and in foreign countries constitutes a challenge to the agricultural economics profession that should receive further consideration in the design of graduate-training curricula and related professional-development activities. This training issue was addressed by a group of 35 rural social scientists at a conference in Bangkok sponsored by the Agricultural Development Council in 1970. This group generally agreed that U.S. graduate education prepares Asian students well for discipline-oriented research that meets international scholarly standards, but that U.S. graduate education does not prepare them as well to conduct applied research on urgent problems of development, particularly those that cut across disciplinary lines.[5]

Recently, a survey of 900 professionals was conducted to assess research priorities for the rural social sciences in West Africa and the need for multidisciplinary collaboration to carry out the research.[6] These types of assessments can provide useful inputs into the continuing professional dialogue on multidisciplinary research and related professional-training activities.

Specialization Versus Breadth in Training

There has been considerable professional debate about the relative merits of broad versus more specialized graduate programs of study for professionals preparing for international development careers. There are many professional agricultural economists in the LDCs who find it necessary to teach a wide range of subject matter in universities that are thinly staffed and in which faculty turnover is relatively high. Similarly, research and public administration roles of LDC agricultural economists may also span a wide range of problems. As professional groups expand in numbers within particular countries, greater specialization occurs within disciplines. Consequently, it is argued that in more-developed countries, and especially in the U.S., professional agricultural economists should combine basic theoretical and analytical preparation with a subject matter area of specialization. The variation in graduate programs among U.S.

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[5]The Agricultural Development Council, The Bangkok Conference, A/D/C Paper, June 1970, p. 2.

[6]Personal communication from Werner Kiene, Ford Foundation, Lagos, Nigeria, March 5, 1979.

universities indicates a considerable degree of flexibility and a lack of consensus on the issue of specialization versus breadth of training. The results of this study provide information to assist faculty advisers of LDC students in the formulation of individual programs of study for students with different backgrounds and needs.

Institution Building in the LDCs

Over the past 25 years, U.S.-supported efforts to establish university-level education and research institutions in LDCs patterned after those in the United States have achieved varying degrees of success. In the professional field of agricultural economics, there has been substantial progress in developing viable indigenous institutions in several countries in Asia. AID-university institution-building contract programs in Asia have been accompanied by Ford Foundation-financed programs in agricultural economics and a major graduate training and professional development program administered by the Agricultural Development Council. In contrast, the institution-building efforts in Latin America have been disappointing, with the exception of Brazil, where significant progress has been made toward establishing graduate agricultural economics education and research capabilities in several universities. However, other programs that seemed to be successfully launched in the 1960s and early 1970s in several Latin American universities have been greatly weakened and in several instances have almost ceased to exist. Political changes and student activist movements within Latin American universities are cited as major factors in the demise of U.S.-supported institution-building efforts. Most of the U.S.-trained agricultural economists who were faculty members in their home-country universities have migrated to other professional positions, often outside of their native countries.

Long-Term Support for U.S. University Participation in International Research and Education

This study has brought into sharper focus the dilemma facing U.S. university units that have had major commitments to international research and education. On the one hand, there has been a continuing flow of LDC students seeking U.S. graduate degrees. Moreover, the study shows that the U.S. training in agricultural economics has been highly regarded by those receiving the training, and that there is both a need and a mutual desire for collaborative research and institution-building efforts involving LDC and U.S. agricultural

economists. On the other hand, there is evidence that university faculty involvements in international research and related technical-assistance activities have been declining. Young professional agricultural economists find it difficult to obtain tenure-system appointments and research support in the international development area.

A longer-term financial support base will be required if the universities are to continue providing high-quality training for substantial numbers of LDC and U.S. graduate students and to collaborate in research and institution building within the LDCs. Recent efforts to reorganize the U.S. foreign assistance programs have addressed this issue and progress is being made through the AID-Title XII program. If actually funded, the newly designed Institute for Scientific and Technological Cooperation could add additional stability to the support of university participation in international development work. However, universities must also seek support at the state level for the development of more internationally relevant education and research programs that will serve the long-term interests of their various clientele groups.

Hopefully, this study and similar efforts by other professional groups will provide useful information and perspectives that will contribute to the development of well-conceived long-term commitments and more adequately supported U.S. university involvements in international research and education.

APPENDIX A

CONTENT AND EVALUATION BY LDC ALUMNI OF OTHER COURSES TAKEN

Description of Courses	Number of Responses	Number of Courses	Average Rating[a]
Economics			
Regional	9	18	2.33
Welfare	8	9	2.50
International	5	6	3.60
Labor	5	7	1.40
Monetary	6	8	3.00
Economic History	3	5	3.33
Agricultural Economics			
Farm Management	22	40	1.45
Agricultural Finance	11	16	1.82
Agricultural Prices	9	13	1.33
Agricultural Extension	7	10	1.86
Coops	10	10	1.70
Agriculture	10	15	3.10
Research Related			
Research Methods	40	47	1.68
Agricultural Research	4	4	1.75
Social Science Related	25	49	2.20
Planning and Development	19	29	2.20
Public Administration	20	40	1.65
Business Courses	21	67	2.00
Computer Courses	25	43	1.80
Language	6	9	2.50
Natural Resources	5	7	1.40

[a]Rating is a weighted average computed by assigning weights to each of five possible responses: 1 - extremely useful; 2 - very useful; 3 - moderately useful; 4 - slightly useful; and 5 - waste of time.

APPENDIX B

EVALUATION OF COURSES BY U.S. AND LDC PROFESSIONALS

Using average evaluations as an initial indication of usefulness of courses, it can be surmised that agricultural development, production economics, micro-economics, sector and project analysis, and econometrics and statistics are the five most useful course areas for U.S. professionals. This statement is based on the fact that these five areas of study received the highest average evaluations of all course areas.

To test the accuracy of this statement and similar statements concerning the usefulness of these course areas relative to other course areas, the T-test was used.

$$H_o: m_1 > m_2$$

$$H_1: m_1 < m_2$$

where m_1 is the average evaluation of agricultural development courses, and m_2 is the average evaluation of macroeconomics courses.

The null hypothesis (which it was hoped could be rejected at the .05 level of significance) states that the average evaluation of agricultural development courses was greater than the average evaluation of macroeconomics courses. (The lower the evaluation, on a scale of from 1 to 5, the higher the evaluation of the course.)

In this case the null hypothesis can be rejected. When the same hypothesis was tested pairing agricultural development with each of the other course areas (excluding the other top four course areas), the null hypothesis can be rejected at the .05 level of significance in the case of every course area except agribusiness studies.

When paired with other course areas among the top five, the null hypothesis cannot be rejected in any case. Thus, even though agricultural development courses received the highest average evaluation, it is not possible to say conclusively that courses in this area are more useful than courses in the other top five course areas.

Using the T-test method to test similar hypotheses involving all pairs of course areas, the following general conclusions were reached about course evaluations and the ranking of courses in terms of usefulness:

1. Agricultural development, production economics, microeconomics, and econometrics and statistics are the most useful course areas. No final ranking can be given to course areas within this group to determine which area is first, second, third, and so on.
2. A second group of courses can be characterized as occupying a middle range of usefulness. This group is made up of courses in the following areas: macroeconomics, LP and operations research, mathematics, agricultural policy, trade and trade policy, agricultural marketing, and food and resource economics.
3. One course area that is of below-medium usefulness is history of economic thought.
4. It is difficult to come to any conclusions about three course areas because too few people took courses in these areas for the T-test results to be statistically satisfactory. These course areas are agribusiness studies, comparative economic systems, and sector and project analysis.

The T-test procedure described above was also used to evaluate LDC responses on usefulness of courses. Because of the greater number of respondents, ranking of the results was much more clear-cut than in the case of the U.S. survey. The results of this series of T-tests produced no surprises. The resultant ranking of courses is identical to that obtained using evaluation means as the only ranking criterion.

However, this statistical analysis does provide some additional information. Four more-or-less clearly delineated groups of course areas emerge, providing an indication of some basic groupings of courses according to usefulness.

1. In the group of most useful courses are microeconomics and econometrics and statistics. They are clearly more highly ranked than all other course areas. However, it is not possible to say with certainty which of the two course areas is more highly evaluated.
2. In the second group are production economics, macroeconomics, agricultural development, agricultural marketing, LP and operations research, and mathematics. Production economics and macroeconomics clearly head this list in terms of ranking, but beyond that it is hard to assign indisputable rankings of the four remaining course areas. Courses in the group could perhaps be characterized as ranging from very useful to useful.

3. In the third group of courses are agribusiness studies, land and resource economics, agricultural policy, and trade and trade policy. These course areas range in usefulness from useful to slightly useful.
4. In the fourth group are comparative economics and history of economic thought. These two course areas rank as slightly or less than slightly useful.

These groupings of course areas do not necessarily represent a precise or unequivocal assignment of course areas into four clearly distinct groups. They do, however, given the results of the T-tests, provide groupings of courses that can be used as a point of reference in comparing course usefulness in a way that may not be possible by ordering courses in a continuum from most useful to least useful.

APPENDIX C

TABLE C.1 -- USEFULNESS OF COURSES TAKEN IN U.S. GRADUATE SCHOOLS AS EVALUATED BY LDC STUDENTS

	Micro Theory			Macro Theory			Stat. & Econometrics		
	(A) Extremely Useful %	(B) Very Useful %	A+B %	(A) Extremely Useful %	(B) Very Useful %	A+B %	(A) Extremely Useful %	(B) Very Useful %	A+B %
Total Sample	47.9	37.2	85.1	34.1	36.9	71.0	43.3	37.3	80.6
Origin									
Asia	50.6	34.4	85.0	35.1	34.7	69.8	47.5	35.8	83.3
Africa	55.8	32.9	92.7	43.6	35.9	79.5	40.2	35.4	75.6
LAC	40.1	42.6	82.7	30.6	39.9	70.5	38.3	37.8	76.1
N. Afr. & ME	47.2	41.5	88.7	33.3	33.3	66.6	30.0	36.5	86.5
Other DCs	46.3	31.7	78.0	28.6	42.9	71.5	39.5	48.8	88.3
Degree Status									
M.S. Only	39.8	38.6	78.4	27.0	40.2	67.2	36.8	38.7	75.5
ABD	41.9	46.2	88.1	30.1	37.6	67.7	52.2	40.2	92.4
Ph.D.	57.3	33.0	90.3	41.6	33.8	75.4	46.5	35.1	81.6
When Last Degree Received									
In Last 5 Yrs.	46.8	38.2	85.0	31.7	37.6	69.3	44.1	39.2	83.3
Over 5 Yrs.	49.2	36.1	85.3	36.8	36.1	72.9	42.5	35.3	77.8
Current Employer									
LDC Govt.	42.5	41.5	84.0	29.3	42.4	71.7	36.9	42.4	79.3
LDC Univ.	54.0	36.4	90.4	33.2	40.2	73.4	46.8	36.1	82.9
LDC Private	39.7	39.7	79.4	27.0	46.0	73.0	35.3	33.8	69.1
TOTAL LDC	47.0	39.1	86.1	30.7	41.9	72.6	41.0	38.4	79.4
Int. Agency	49.1	34.5	83.6	41.8	21.8	63.6	40.7	37.0	77.7
DC Govt.	28.6	28.6	57.2	26.7	33.3	60.0	35.7	57.1	92.8
DC Univ.	67.6	26.5	94.1	55.9	32.4	88.3	79.4	14.7	94.1
TOTAL DC	52.4	31.1	83.5	44.2	26.9	71.1	52.9	32.4	85.3

APPENDIX C

TABLE C.2 -- USEFULNESS OF COURSES TAKEN IN U.S. GRADUATE SCHOOLS AS EVALUATED BY LDC STUDENTS

	LP and OP Research			Mathematics			Ag. & Econ. Development		
	(A) Extremely Useful %	(B) Very Useful %	A+B %	(A) Extremely Useful %	(B) Very Useful %	A+B %	(A) Extremely Useful %	(B) Very Useful %	A+B %
Total Sample	30.0	35.6	65.6	26.5	43.4	69.9	33.1	36.5	69.6
Origin									
Asia	30.9	35.8	66.7	26.2	43.1	69.3	33.6	39.2	72.8
Africa	29.4	27.9	57.3	28.3	40.0	68.3	48.6	31.9	80.5
LAC	28.2	37.6	65.8	27.7	46.0	73.7	26.8	36.3	63.1
N. Afr. & ME	32.5	30.0	62.5	21.4	42.9	64.3	28.3	37.0	65.3
Other DCs	30.3	48.5	78.8	25.9	40.7	66.6	35.5	29.0	64.5
Degree Status									
M.S. Only	23.0	37.2	60.2	23.4	41.3	64.7	38.5	33.3	71.8
ABD	36.5	37.8	74.3	23.0	50.0	73.0	31.5	30.0	61.5
Ph.D.	33.6	33.6	67.2	30.0	42.7	72.7	29.0	41.1	70.1
When Last Degree Received									
In Last 5 Yrs.	27.5	39.7	67.2	28.5	45.0	73.5	31.0	33.9	64.9
Over 5 Yrs.	32.8	31.0	63.8	24.2	41.6	65.8	35.4	39.2	74.6
Current Employer									
LDC Govt.	26.2	37.2	63.4	19.8	42.7	62.5	36.6	36.6	73.2
LDC Univ.	37.0	35.1	72.1	27.4	45.1	72.5	29.7	41.1	70.8
LDC Private	21.4	33.9	55.3	24.5	44.9	69.4	24.5	45.3	69.8
TOTAL LDC	30.1	35.8	65.9	24.1	44.2	68.3	32.0	39.8	71.8
Int. Agency	26.2	47.6	73.8	38.9	36.1	75.0	35.4	22.9	58.3
DC Govt.	16.7	33.3	50.0	30.0	40.0	70.0	33.3	40.0	73.3
DC Univ.	53.3	30.0	83.3	34.5	48.3	82.8	37.5	33.3	70.8
TOTAL DC	34.5	39.3	73.8	36.0	41.3	77.3	35.6	28.7	64.3

APPENDIX C

TABLE C.3 -- USEFULNESS OF COURSES TAKEN IN U.S. GRADUATE SCHOOLS AS EVALUATED BY LDC STUDENTS

	Ag. Policy			Trade & Trade Policy			Ag. Marketing		
	(A) Extremely Useful %	(B) Very Useful %	A+B %	(A) Extremely Useful %	(B) Very Useful %	A+B %	(A) Extremely Useful %	(B) Very Useful %	A+B %
Total Sample	28.4	28.6	57.0	19.9	34.1	54.0	31.1	35.1	66.2
Origin									
Asia	25.0	27.2	52.2	17.9	32.9	50.8	31.5	33.7	65.2
Africa	43.1	27.6	70.7	28.6	38.8	67.4	44.8	34.3	79.1
LAC	26.1	28.9	55.0	18.3	31.2	49.5	25.2	36.8	62.0
N. Afr. & ME	21.4	40.5	61.9	13.8	41.4	55.2	20.9	39.5	60.4
Other DCs	44.0	20.0	64.0	31.6	36.8	68.4	45.8	29.2	75.0
Degree Status									
M.S. Only	31.4	31.4	62.8	21.8	36.1	57.9	37.4	34.3	71.7
ABD	23.4	25.0	48.4	22.6	30.6	53.2	31.3	39.1	70.4
Ph.D.	27.6	27.6	55.2	17.2	33.8	51.0	25.0	34.6	59.6
When Last Degree Received									
In Last 5 Yrs.	26.7	26.7	53.4	18.7	32.6	51.3	28.8	37.0	65.8
Over 5 Yrs.	29.9	30.3	60.2	21.4	35.8	57.2	33.5	33.0	66.5
Current Employer									
LDC Govt.	27.7	27.7	55.4	17.8	39.0	56.8	32.9	36.8	69.7
LDC Univ.	27.3	33.6	60.9	19.5	33.3	52.8	28.4	40.5	68.9
LDC Private	27.3	22.7	50.0	16.2	43.2	59.4	33.3	29.2	62.5
TOTAL LDC	27.5	29.6	57.1	18.2	37.6	55.8	31.0	37.4	68.4
Int. Agency	26.8	26.8	53.6	16.7	36.1	52.8	35.3	32.4	67.7
DC Govt.	33.3	33.3	66.6	20.0	30.0	50.0	38.5	23.1	61.6
DC Univ.	41.7	12.5	54.2	41.2	11.8	53.0	40.0	32.0	72.0
TOTAL DC	32.5	23.4	55.9	23.8	28.6	52.4	37.5	30.6	68.1

APPENDIX C

TABLE C.4 -- USEFULNESS OF COURSES TAKEN IN U.S. GRADUATE SCHOOLS AS EVALUATED BY LDC STUDENTS

	Production Economics			Land and Res. Economics			Agribusiness		
	(A) Extremely Useful %	(B) Very Useful %	A+B %	(A) Extremely Useful %	(B) Very Useful %	A+B %	(A) Extremely Useful %	(B) Very Useful %	A+B %
Total Sample	39.6	38.6	78.2	23.9	37.4	61.3	23.5	31.6	55.1
Origin									
Asia	35.9	41.0	76.9	21.7	39.8	61.5	26.7	30.2	56.9
Africa	52.1	31.0	83.1	37.3	37.3	74.6	41.2	23.5	64.7
LAC	37.6	40.6	78.2	21.1	33.9	55.0	13.4	34.1	47.5
N. Afr. & ME	47.8	41.3	89.1	19.5	36.6	56.1	15.0	35.0	50.0
Other DCs	35.3	26.5	61.8	30.8	38.5	69.3	33.3	41.7	75.0
Degree Status									
M.S. Only	35.4	40.8	76.2	26.1	36.9	63.0	32.8	30.4	63.2
ABD	45.3	37.3	82.6	15.7	49.0	64.7	6.9	31.0	37.9
Ph.D.	41.3	37.3	78.6	24.3	34.6	58.9	15.0	33.7	48.7
When Last Degree Received									
In Last 5 Yrs.	40.8	40.8	81.6	21.8	37.6	59.4	23.7	32.1	55.8
Over 5 Yrs.	38.4	36.5	74.9	26.0	37.2	63.2	23.3	31.1	54.4
Current Employer									
LDC Govt.	40.4	41.6	82.0	25.8	39.4	65.2	26.2	32.1	58.3
LDC Univ.	39.4	34.9	74.3	20.3	40.7	61.0	23.5	43.1	66.6
LDC Private	37.5	39.3	76.8	22.7	33.3	55.5	45.2	29.0	74.2
TOTAL LDC	39.5	38.3	77.8	23.0	39.2	62.2	28.9	34.9	63.8
Int. Agency	45.7	39.1	84.8	26.5	38.2	64.7	11.1	33.3	44.4
DC Govt.	28.6	42.9	71.5	37.5	25.0	62.5	33.3	50.0	83.3
DC Univ.	40.6	46.9	87.5	50.0	25.0	75.0	20.0	20.0	40.0
TOTAL DC	41.3	42.4	83.7	35.5	32.3	67.8	20.0	32.0	52.0

APPENDIX C

TABLE C.5 -- USEFULNESS OF COURSES TAKEN IN U.S. GRADUATE SCHOOLS AS EVALUATED BY LDC STUDENTS

	Hist. of Econ. Thought			Comp. Econ. Systems			Other Courses		
	(A) Extremely Useful %	(B) Very Useful %	A+B %	(A) Extremely Useful %	(B) Very Useful %	A+B %	(A) Extremely Useful %	(B) Very Useful %	A+B %
Total Sample	7.6	20.6	28.2	9.4	28.6	38.0	36.7	35.4	72.1
Origin									
Asia	4.9	18.9	23.8	10.5	22.4	32.9	38.9	30.0	68.9
Africa	5.1	20.5	25.6	3.4	37.9	41.3	34.4	53.1	87.5
LAC	14.9	20.3	35.2	8.8	26.3	35.1	35.1	35.1	70.2
N. Afr. & ME	3.6	17.9	21.5	5.0	45.0	50.0	37.5	29.2	66.7
Other DCs	7.1	42.9	50.0	30.0	30.0	60.0	35.7	42.9	78.6
Degree Status									
M.S. Only	3.7	18.7	22.4	10.2	26.1	36.3	31.7	41.5	73.2
ABD	10.3	23.1	33.4	3.3	26.7	30.0	42.1	18.4	60.5
Ph.D.	9.9	21.4	31.3	10.8	32.4	43.2	38.5	36.8	75.3
When Last Degree Received									
In Last 5 Yrs.	3.0	17.3	20.3	4.3	28.3	32.6	38.0	35.5	73.5
Over 5 Yrs.	11.8	23.6	35.4	14.0	29.0	43.0	35.3	35.3	70.6
Current Employer									
LDC Govt.	5.2	21.9	27.1	8.1	30.6	38.7	31.6	42.1	73.7
LDC Univ.	10.3	25.0	35.3	6.7	40.0	46.7	36.8	35.6	72.4
LDC Private	0.0	7.7	7.7	15.8	15.8	31.6	44.4	33.3	77.7
TOTAL LDC	6.3	21.1	27.4	8.7	31.7	40.4	35.8	37.7	73.5
Int. Agency	20.8	20.8	41.6	14.3	21.4	35.7	36.7	23.3	60.0
DC Govt.	0.0	33.3	33.3	0.0	33.3	33.3	16.7	66.7	83.4
DC Univ.	16.7	25.0	41.7	37.5	37.5	75.0	75.0	25.0	100.0
TOTAL DC	15.6	24.4	40.0	17.9	28.6	46.5	40.9	29.5	70.4

APPENDIX D

TABLE D.1 -- ADDITIONAL COURSES LDC ALUMNI WOULD LIKE TO HAVE EMPHASIZED MORE IN GRADUATE SCHOOL

	All Responses		Degree Status		
	No.	%	M.S. Only %	ABD %	Ph.D. %
1) Ag. Dev.-Sector Planning	130	11.7	12.8	5.8	12.4
2) Marketing-Agribusiness	112	10.1	14.6	8.0	6.2
3) Farm Mgt. Prod.-Res. Econ.	76	6.8	7.5	7.3	6.0
4) General Ag. Topics	15	1.4	1.9	-	1.2
5) Micro & Macro Theory	79	7.1	6.3	7.3	8.0
6) Income Dist. & Welfare	33	3.0	1.7	3.6	4.0
7) Trade and Policy	54	4.9	5.2	4.3	4.6
8) Reg. and Econ. Dev.	53	4.8	4.8	1.5	5.7
9) Econometrics and Stat.	129	11.6	11.7	13.0	11.1
10) Mathematics	52	4.7	1.9	10.1	5.9
11) Programming, Simulation	129	11.6	10.7	14.5	11.8
12) Res. Methods and Mgt.	27	2.4	1.3	4.3	3.0
13) Proj. Planning & Analysis	74	6.7	5.0	8.0	7.9
14) Management & Administration	111	10.0	11.9	8.7	8.5
15) Other Disciplines	35	3.2	2.7	3.6	3.4
TOTAL	1109	100	100	100	100
Trad. Ag. Econ. (2,3,4,8)	256	23.1	28.8	16.8	19.1
General Econ. (5,6,7)	166	15.0	13.2	15.2	16.6
Quant. Methods (9,10,11,12)	337	30.3	25.6	41.9	31.8
Planning & Projects (1,13)	204	18.4	17.8	15.8	20.3
Mgt. and Admin. (14)	111	10.0	11.9	8.7	8.5
Other Disciplines (15)	35	3.2	2.7	3.6	3.4
TOTAL	1109	100	100	100	100

APPENDIX D

TABLE D.2 -- ADDITIONAL COURSES LDC ALUMNI WOULD LIKE TO HAVE EMPHASIZED MORE IN GRADUATE SCHOOL

	Regional Distribution			
	Asia	Africa	LAC	NAME
	%	%	%	%
1) Ag. Dev.-Sector Planning	10.3	12.8	11.7	10.8
2) Marketing-Agribusiness	7.1	12.8	12.2	10.8
3) Farm Mgt. Prod.-Res. Econ.	6.3	8.1	6.3	12.9
4) General Ag. Topics	1.3	2.7	1.3	1.1
5) Micro & Macro Theory	6.8	5.4	7.9	4.3
6) Income Dist. & Welfare	1.8	2.0	4.3	3.2
7) Trade and Policy	6.0	3.4	4.1	2.2
8) Reg. and Econ. Dev.	5.3	5.4	4.1	3.2
9) Econometrics and Stat.	13.9	10.1	9.9	14.0
10) Mathematics	5.8	4.7	3.6	5.4
11) Programming, Simulation	12.8	9.5	10.9	14.0
12) Res. Methods and Mgt.	3.0	2.7	2.5	1.1
13) Proj. Planning & Analysis	6.8	9.5	6.6	4.3
14) Management & Administration	9.6	8.1	11.7	9.7
15) Other Disciplines	3.0	2.7	3.0	3.2
TOTAL	100	100	100	100
Trad. Ag. Econ. (2,3,4,8)	20.2	29.0	23.9	28.0
General Econ. (5,6,7)	14.6	10.8	12.3	9.7
Quant. Methods (9,10,11,12)	35.5	27.0	26.9	34.5
Planning & Projects (1,13)	17.1	22.3	18.3	15.1
Mgt. and Admin. (14)	9.6	8.1	11.7	9.7
Other Disciplines (15)	3.0	2.7	3.0	3.2
TOTAL	100	100	100	100

APPENDIX D

TABLE D.3 -- ADDITIONAL COURSES LDC ALUMNI WOULD LIKE TO HAVE EMPHASIZED MORE IN GRADUATE SCHOOL

	Last Degree Rec'd. 1974-79 %	Last Degree Rec'd. 1963-73 %
1) Ag. Dev.-Sector Planning	12.3	11.1
2) Marketing-Agribusiness	11.4	8.8
3) Farm Mgt. Prod.-Res. Econ.	6.7	7.0
4) General Ag. Topics	.9	1.8
5) Micro & Macro Theory	7.4	6.8
6) Income Dist. & Welfare	2.7	3.2
7) Trade and Policy	4.9	4.8
8) Reg. and Econ. Dev.	4.9	4.7
9) Econometrics and Stat.	13.9	9.3
10) Mathematics	4.0	5.4
11) Programming, Simulation	11.8	11.5
12) Res. Methods and Mgt.	2.2	2.7
13) Proj. Planning & Analysis	5.3	8.1
14) Management & Administration	8.5	11.5
15) Other Disciplines	3.1	3.2
TOTAL	100	100
Trad. Ag. Econ. (2,3,4,8)	23.9	22.3
General Econ. (5,6,7)	15.0	14.8
Quant. Methods (9,10,11,12)	31.9	28.9
Planning & Projects (1,13)	17.6	19.2
Mgt. and Admin. (14)	8.5	11.5
Other Disciplines (15)	3.1	3.2
TOTAL	100	100

APPENDIX E

TABLE E.1 -- ADVANTAGES AND DISADVANTAGES OF PROCEDURES USED TO COMPLETE Ph.D. THESIS RESEARCH

	Home Problem Home Research		Home Problem U.S. Research		U.S. Problem U.S. Research	
	No.	%	No.	%	No.	%
All Ph.D.s	91	32.7	83	29.9	89	32.0
Advantages						
Understand Home-Country Problems	58	57.4	29	31.9	8	9.4
Contact People Knowing Problems	5	5.0	2	2.2	-	-
Learn Conditions for Home-Country Research	17	16.8	1	1.1	3	3.5
Data More Available	11	10.9	6	6.6	20	23.5
Guidance More Available	1	1.0	14	15.4	5	5.9
References More Available	3	3.0	11	12.1	9	10.6
Computer More Available	1	1.0	5	5.5	9	10.6
Saved Money	1	1.0	5	5.5	5	5.9
Saved Time	1	1.0	13	14.3	11	12.9
Contribute to Theory	-	-	1	1.1	-	-
Other	3	3.0	4	4.4	15	17.6
TOTAL	101	100	91	100	85	100
Disadvantages						
Topic Too Narrow	2	2.3	4	6.0	5	8.8
Profs Unfamiliar with Topic	4	4.5	2	3.0	1	1.8
Research Not Useful at Home	2	2.3	6	9.0	31	54.4
Lack Guidance	20	22.7	4	6.0	1	1.8
Lack Library & Computer	8	9.1	-	-	2	3.5
Data Problems	13	14.8	32	47.8	7	12.3
Poor Academic Setting	6	6.8	1	1.5	-	-
Lack of Time	24	27.3	7	10.4	5	8.8
Lack Objectivity	-	-	3	4.5	-	-
Costs More	7	8.0	4	6.0	-	-
Other	2	2.3	4	6.0	5	8.8
TOTAL	88	100	67	100	57	100

APPENDIX F

TABLE F.1 -- NONDEGREE PROGRAMS ATTENDED BY RESPONDENTS IN LAST FIVE YEARS AND SPONSORS OF THE PROGRAMS BY REGION

Type of Training	Total Sample		Asia		Africa		LAC		NAME	
	No.	%	No.	%	No.	%	No.	%	No.	%
Grad Courses	28	9	13	14	2	3	8	7	4	17
In-Service	49	16	15	16	11	17	18	15	1	4
Seminars	84	27	19	20	20	30	36	31	6	26
Short Courses	113	36	32	34	24	36	44	38	12	52
Workshops	26	8	11	12	8	12	5	4	-	-
Other	11	4	4	4	1	2	6	5	-	-
TOTAL RESPONSES	311	100	94	100	66	100	117	100	23	100
Sponsors										
U.S. Govt. Agencies	54	18	14	15	9	14	24	21	7	30
U.S. Universities	18	6	13	14	1	2	2	2	1	4
U.S. Foundations	12	4	2	2	4	6	3	3	1	4
Other DC Govts.	16	5	4	4	7	11	1	1	2	9
Other DC Univ.	5	2	-	-	-	-	5	4	-	-
LDC Govts.	51	17	16	18	14	21	19	16	2	9
LDC Univ.	23	8	1	1	7	11	12	10	-	-
Int. Institutes (CIMMYT, IRRI, etc.)	67	22	27	30	15	23	25	22	-	-
Int. Agencies (FAO, IBRD, OAS)	45	15	10	11	5	8	19	16	10	44
Private Firms	14	5	4	4	4	6	6	5	-	-
TOTAL SPONSORS	305	100	91	100	66	100	116	100	23	100

APPENDIX G

TABLE G.1 -- ADDITIONAL SKILLS, TRAINING, AND/OR PROFESSIONAL EXPERIENCE NEEDED BY LDC RESPONDENTS OVER NEXT FIVE YEARS

	Total Responses		Geographic Region				Degree Status	
	No.	%	Asia %	Africa %	LAC %	NAME %	M.S. Only %	Ph.D. %
Trad. Ag. Economics	130	12.1	10.5	8.6	15.2	13.8	17.5	8.0
General Economics	78	7.2	6.4	2.9	9.6	6.4	8.1	6.7
Quantitative Methods	254	23.6	26.2	24.5	19.7	21.3	17.9	28.4
Planning/Project Analysis	143	13.3	10.5	16.5	16.0	10.6	24.9	12.9
Mgt. & Administrative	74	6.9	6.1	5.8	8.1	5.3	7.2	6.3
Other Disciplines	13	1.2	1.2	2.2	1.1	1.1	1.5	1.3
More Courses (Ph.D.)	75	7.0	6.4	6.5	7.9	11.7	11.1	2.2
TOTAL TRAINING	767	71.3	67.3	67.0	77.6	70.2	88.2	65.8
Res. & Teaching Experience	84	7.8	9.3	10.1	5.1	6.4	4.9	9.3
Advanced Tutorial	57	5.3	7.6	3.9	2.8	8.5	1.1	9.5
Practical Job Experience	55	5.1	4.2	6.5	5.1	7.4	5.3	4.5
Other	95	8.8	9.3	12.2	7.9	5.3	8.1	9.5
TOTAL EXPERIENCE	291	27.0	30.4	32.7	20.9	27.6	19.4	32.8
None Needed	20	1.9	2.4	0.7	1.7	2.1	2.3	1.5
GRAND TOTAL	1078	100	100	100	100	100	100	100

APPENDIX H

TABLE H.1 -- DISTRIBUTION OF COUNTRIES WITH MORE (MDAE) AND LESS-DEVELOPED AGRICULTURAL ECONOMICS (LDAE) PROFESSIONALS[a]

MDAE	LDAE		
Asia			
India	Afghanistan		Indonesia
South Korea	Bangladesh		Nepal
Malaysia	Burma		Pakistan
Philippines	Cambodia		Sri Lanka
Taiwan	China (DPR)		Viet Nam
Thailand	Hong Kong		
Africa			
Nigeria	Cameroon		Sierra Leone
Kenya	Ethiopia		Swaziland
South Africa	Ghana		Uganda
Tanzania	Liberia		Zaire
	Malawi		Rhodesia
LAC			
Brazil	Argentina	El Salvador	Paraguay
Chile	Bolivia	Guatemala	Peru
Colombia	Barbados	Guyana	Trinadad-T
Mexico	Costa Rica	Honduras	Uruguay
	Cuba	Jamaica	Venezuela
	Dominican Republic	Nicaragua	
	Ecuador	Panama	
N. Africa and ME			
Egypt	Bahrain		Lebanon
	Cyprus		Libya
	Iran		Sudan
	Iraq		Tunisia
	Jordan		Turkey

[a]Countries with more-developed agricultural economics professions (MDAE) have an indigeneous training capability at the graduate level (one or more M.S. programs), an established tradition in agricultural economics, and usually sufficient numbers of formally trained agricultural economists to be recognized as a group. Countries with less-developed agricultural economics professions (LDAE) do not meet two or more of these criteria.

APPENDIX I

TABLE I.1 -- PROFESSIONAL EMPLOYMENT GOALS OF ALUMNI WHEN STUDYING

Employment Goal	First Choice		Second Choice		Third Choice		Sum of First Three Choices		Rank	Indicated as Goal	
	No.	%	No.	%	No.	%	No.	%		No.	%
1. University Teaching and Research	57	52.8	17	15.7	9	8.3	83	76.8	1	88	81.5
2. Researcher in Govt.	3	2.8	16	14.8	19	17.6	38	35.2	3	52	48.1
3. Consultant/Business	2	1.9	7	6.5	7	6.5	16	14.9	5	35	32.4
4. Ag. Planning/Projects	2	1.9	15	13.9	15	13.9	32	29.7	4	46	42.6
5. Ag. Extension	1	.9	1	.9	6	5.6	8	7.4	6	22	20.4
6. University Admin.	0	0	3	2.8	1	.9	4	3.7	7	17	15.7
7. Government Admin.	0	0	1	.9	1	.9	2	1.8	8	14	13.0
8. Internat'l. Dev. Agency	37	34.3	23	21.3	11	10.2	71	65.8	2	79	73.1

APPENDIX J

TABLE J.1 -- GREATEST AGRICULTURAL DEVELOPMENT NEEDS OF LDCs

Development Need	First Need		Second Need		Third Need		Sum of 1st, 2nd & 3rd		Rank	Need Indicated	
	No.	%	No.	%	No.	%	No.	%		No.	%
1. More technical assistance overseas by U.S. professionals	0	0	0	0	1	.9	1	.9	12	5	4.6
2. More indigenous capabilities in agricultural economics	10	9.3	8	7.4	8	7.4	26	24.1	5	39	36.1
3. Development of appropriate technology	18	16.7	12	11.1	13	12.0	43	39.8	1	51	47.2
4. Better extension programs	6	5.6	8	7.4	12	11.1	26	24.1	5	33	30.6
5. More governmental support for agricultural development	20	18.5	8	7.4	9	8.3	37	34.2	4	47	43.5
6. Domestic political stability	16	14.8	5	4.6	4	3.7	25	23.1	6	29	26.9
7. Better research facilities	1	.9	1	.9	1	.9	3	2.7	11	11	10.2
8. Development of physical infrastructure	6	5.6	10	9.3	10	9.3	26	24.2	5	31	28.7
9. More trained nationals in agricultural sciences	3	2.8	22	20.4	13	12.0	38	35.2	3	51	47.2
10. Improvements in foreign trade markets	2	1.9	1	.9	2	1.9	5	4.7	10	9	8.3
11. Better marketing institutions and cooperatives	0	0	8	7.4	8	7.4	16	14.8	8	26	24.1
12. More internal management capabilities	15	13.9	13	12.0	13	12.0	41	37.9	2	50	46.3
13. Planning and policy analysis	5	4.6	8	7.4	9	8.3	22	20.3	7	33	30.6
14. Better agricultural policy	0	0	1	.9	0	0	1	.9	12	1	.9
15. Land tenure reform	5	4.6	1	.9	0	0	6	5.5	9	6	5.6
16. Greater small-farmer determination of development projects	0	0	1	.9	0	0	1	.9	12	1	.9
17. Free private sector	0	0	0	0	1	.9	1	.9	12	1	.9
18. Increased interest in welfare of small farmer	1	.9	0	0	0	0	1	.9	12	1	.9
19. More practical nonidealogical approach to problems	1	.9	0	0	0	0	1	.9	12	1	.9

APPENDIX K

TABLE K.1 -- ACTIVITIES IN WHICH U.S. PROFESSIONAL AGRICULTURAL ECONOMISTS CAN BE MOST PRODUCTIVE IN INTERNATIONAL DEVELOPMENT WORK

Activity	First Most Important		Second Most Important		Third Most Important		Sum of 1st, 2nd & 3rd		Rank	Indicated as Important	
	No.	%	No.	%	No.	%	No.	%		No.	%
1. Teaching and advising foreign students in LDC universities	18	16.7	20	18.5	23	21.3	61	56.5	3	85	78.7
2. Teaching and advising foreign students in U.S. universities	22	20.4	16	14.8	13	12.0	51	47.2	4	84	77.8
3. Research on LDC problems from a U.S. base	4	3.7	8	7.4	14	13.0	26	24.1	5	71	65.7
4. Research & technical assistance with LDC government institutions	36	33.3	22	20.4	13	12.0	71	65.7	1	89	82.4
5. Research & technical assistance with technical assistance agency	24	22.2	27	25.0	19	17.6	70	64.8	2	89	82.4

APPENDIX L

TABLE L.1 -- ACTIVITIES OF MOST INTEREST FOR EXPANDED INVOLVEMENT IN DEVELOPMENT

Activities	First Choice		Second Choice		Third Choice		Sum of 1st, 2nd & 3rd Choices		Rank	Indicated as Area of Expansion	
	No.	%[a]	No.	%	No.	%	No.	%		No.	%
1. Joint research with LDC colleagues overseas	15	23.1	8	12.3	5	7.7	28	43.1	1	45	69.2
2. Advising LDC students on their research	6	9.2	6	9.2	8	12.3	20	30.7	5	36	55.4
3. Preparation and monitoring of development projects	4	6.2	6	9.2	8	12.3	18	27.7	6	30	46.2
4. Teaching graduate courses in development	6	9.2	1	1.5	3	4.6	10	15.3	8	28	43.1
5. Teaching undergraduate courses in development	2	3.1	2	3.1	1	1.5	5	7.7	9	19	29.2
6. Overseas technical-assistance assignments (1-3 months)	11	16.9	8	12.3	4	6.2	23	35.4	3	35	53.8
7. Overseas technical assistance (1-2 years)	11	16.9	7	10.8	4	6.2	22	33.9	4	33	50.8
8. Short-term consulting	8	12.3	10	15.4	6	9.2	24	36.9	2	36	55.4
9. Organization & participation in intern'l. conferences and seminars	4	6.2	5	7.7	7	10.8	16	24.7	7	34	52.3

[a]Percents are calculated over a base of 65, the number of respondents who gave "yes" answers to the question: "Would you like to increase your current involvement in development activities?"

APPENDIX M

TABLE M.1 -- WHAT INTERNATIONAL AGENCIES CAN DO TO INCREASE PARTICIPATION OF YOUNG PROFESSIONALS IN INTERNATIONAL DEVELOPMENT WORK

	What Agencies Can Do	No.	%
I.	PROVIDE MORE JOBS		
	More long-term career opportunities	21	19.4
	More short-term technical-assistance work	8	7.4
	More entry-level positions	9	8.3
	More jobs for young professionals from LDCs	4	3.7
	More short-term research jobs for graduate students	11	10.2
	Provide more information on job openings	4	3.7
	TOTAL FOR CATEGORY	57	52.7
II.	PROVIDE MORE FINANCIAL SUPPORT		
	More funds for projects in LDCs	7	6.5
	More long-term funding of projects in LDCs	2	1.9
	More funding of small-scale projects	2	1.9
	More funding implementing Title XII	1	.9
	More funding of development research in LDCs	10	9.3
	More funding for universities to encourage greater participation by universities in assistance programs	21	19.4
	More funds for private enterprises interested in development work	2	1.9
	More funds to found more international research centers	1	.9
	TOTAL FOR CATEGORY	46	42.7
III.	CHANGES IN POLICY AND PERSONNEL RELATIONS		
	Train more local professionals	4	3.7
	Provide more interaction between U.S. and LDC professionals	1	.9
	Provide more opportunities to publish	2	1.9
	Pay higher salaries	4	3.7
	Demonstrate more concern for families of personnel	4	3.7
	Assist personnel returning from overseas assignments in locating domestic employment	3	2.8
	Cut red tape and encourage flexibility	11	10.2
	Reduce political strings attached to funds	1	.9
	Keep monies from power-hungry development entrepreneurs	1	.9
	More seminars	3	2.8
	TOTAL FOR CATEGORY	34	31.5
IV.	NOTHING	3	2.8
	TOTAL FOR CATEGORY	3	2.8

APPENDIX N

ADC-RTN Workshop

Review and Evaluation of Graduate
Training of Agricultural Economists
for International Development Work

June 5-6, 1979

Michigan State University

The purpose of the Workshop was to review the results of an American Agricultural Economics Association sponsored, AID-financed study of graduate training for international development work and to formulate conclusions and recommendations for future training and related professional development activities.

List of Participants

Earl H. Brown
Agency for International Development

Darrell Fienup
Michigan State University

Roger Fox
University of Arizona

J. Price Gittinger
The World Bank

Reed Hertford
The Ford Foundation

Dale Hoover
North Carolina State University

James P. Houck
University of Minnesota

Carleton Infanger
Agency for International Development

Richard L. Meyer
Ohio State University

Kenneth Nobe
Colorado State University

David W. Norman
Kansas State University

Wyn Owen
University of Colorado

Harold M. Riley
Michigan State University

Eldon D. Smith
University of Kentucky

B. F. Stanton
Cornell University

John Steele
U.S. Department of Agriculture

Russell Stevenson
Agricultural Development Council

William Thiesenhusen
University of Wisconsin

Eduardo Trigo
Instituto Internacional de
Ciencias Agricolas

Ruth Useem
Michigan State University

Charles Whyte
Virginia State College

James Worley
Vanderbilt University

Thomas Zalla
Michigan State University

APPENDIX O

Abstract of Symposium Held at the Annual Meetings of the American Agricultural Economics Association at Pullman, Washington, July 29 - August 1, 1979.

Needs and Strategies for Improving Graduate Training for Work in International Agricultural Development. Harold Riley, Chairperson (Michigan State University), Darrell Fienup (Michigan State University), Kenneth Nobe (Colorado State University), and Russell Stevenson (Agricultural Development Council).

Fienup reported the results of the AAEA International Committee survey of LDC agricultural economists who have taken graduate work at U.S. universities and a related survey of U.S. professionals who, at the time they completed their graduate programs, were strongly oriented toward careers in international development. The studies indicate that a high percentage of the LDC alumni have employment in the field of agricultural economics in their home countries and for the most part they have found their training to be useful and relevant. The demand for U.S. graduate training in agricultural economics is expected to continue at a high level, but several program modifications are being suggested to make the training more useful in the LDCs, especially in the least-developed countries. Nondegree training, both in the United States and in developing countries, with additional emphasis on research methodologies, planning, project evaluation, and public administration, are areas where alumni desire further training.

Although the high proportion of the young U.S. professionals surveyed have significant job involvements in international development, they hold the view that many of their peers are actually deserting this area due to the uncertainty of their positions and lack of support within universities.

The validity of the survey results and the possibility of additional analysis of the data were points of discussion in the symposium. There was a high degree of interest in the results of the surveys and several suggestions were made for strengthening graduate training both in the United States and in the LDCs. A publication summarizing the results of the study and a related set of recommendations will be available later this year.

APPENDIX P

International Conference of Agricultural Economists
Banff, Canada, September 1979

Report of Discussion Group No. 28
Agricultural Economics Curriculum for Postgraduates and Undergraduates

Future Demand for Agricultural Economists

An important long-run aim of training in agricultural economics was recognized as being the development of local training capacity within countries to meet their own particular professional needs. Over the next 10-20 years, however, the demand for training up to the Ph.D. in the universities of more developed countries (MDCs) for professional work in less developed countries (LDCs) was anticipated as being likely to continue. Moreover, while demand in MDCs for agricultural economists is likely to remain at replacement level at best, in LDCs opportunities are expanding rapidly.

Curriculum development must be consistent with job opportunities which, in the short run, will largely define the nature of professional training. In the longer run, however, anticipated patterns of rural change which embody social needs must be reflected in the effective demand for the profession.

Referring to traditional training, neoclassical concepts were viewed as valuable for analysis and diagnosis of production problems because a knowledge of factors affecting incremental technological change is essential to both extension and research workers. Despite apparent inadequacies, an indigenous application of neoclassical theory can be developed through a flexible acceptance of local criticism and advice.

Undergraduate Curriculum Development

Most professional training is received at postgraduate levels; therefore, the undergraduate curriculum was only briefly discussed. Basic economic theory and some quantitative skills are essential and, ideally, should be introduced at the undergraduate level. In LDCs the weakness of students' background to grasp basic theoretical concepts was recognized although there is equally a need for this training in LDCs as in the case of undergraduate training in MDCs.

Generally, undergraduate courses in agricultural economics are a means of broadening students' perspectives rather than preparing students as professionals. This is particularly so in LDCs. In the face of a strong demand for generally trained agriculturalists, the only solution to an inadequate basic training in agricultural economics at the undergraduate level may well be to provide additional training before entering postgraduate courses for students from LDCs wishing to pursue a career in agricultural economics.

Postgraduate Curriculum Development

The response to the type of training received in MDCs by agricultural economists working in LDCs has generally been favorable. Some inadequacies are apparent in institutional subjects, problem solving with respect to LDCs, and the evaluation, management, and administration of projects. Project evaluation, management, and administration may be most effectively handled by short courses held in MDCs or LDCs, sponsored by universities and international agencies. Communication skills of agricultural economists also appear somewhat deficient within the profession and with other scientific professions.

Strengthening both teaching and research capabilities of indigenous universities in LDCs was viewed as an important means of improving both undergraduate and postgraduate training. Different types of development programs have significantly different effects on the long-run development of local capabilities and it was considered essential that donor agencies examine critically the effect of their own programs in this respect.

Institutional Strengthening of Universities in LDCs

Strengthening the local universities in LDCs was repeatedly emphasized. There are obvious short-term economies in professional training abroad but this can retard the long-term development of local institutions. Even when indigenous teaching staff numbers are small, the development of a strong local university is in the national interest of LDCs.

Thus, a close examination of the comparability of local employment opportunities for indigenous professional economists and an appraisal of long-term effects of continuing reliance on expatriate staff were viewed as highly desirable in many instances. Major factors in losing well-qualified staff from teaching appear to be: (a) uncompetitive salaries, (b) training insufficient professionals to allow for attrition, (c) failure to make reasonable legal bonding arrangements, (d) failure to develop postgraduate training, at least to M.Sc. level, and viable research programs in local universities.

The research capability of local universities in LDCs was viewed as an essential to professional training. Encouraging cooperative research programs with universities in MDCs and the willingness of international development agencies to encourage research programs based on local universities were considered two important means of achieving this.

In view of the unlikelihood of university expansion in MDCs, increased institutional flexibility will be necessary to implement cooperative ventures with training institutions of LDCs. Traditionally, agricultural economists have been flexible in their pragmatism.

Recommendation

The IAAE Executive Group should establish a committee on "Training and Professional Development" to organize and promote activities that will expand and strengthen the training of professional agricultural economists with a special concern for the needs of less developed countries. It is suggested that the committee be asked to consider the following specific activities:

1. Offer suggestions and assist the Vice President for Program in the planning of program events on training and professional development at regular Association Conferences.

2. Promote training and professional development activities through regional professional associations. Teaching workshops, special short courses, and the preparation and exchange of teaching materials and professional publications should be encouraged.

3. Initiate contacts with international development agencies to communicate the need for sustained, long-term funding commitments to support (a) scholarships for LDC students seeking postgraduate training in more developed countries, (b) institutional grants to support the development of postgraduate training and applied research capabilities in LDCs, (c) institutional grants to selected MDC universities to develop further and sustain a professional staff capability for training professional agricultural economists to work on LDC problems and for long-term technical-assistance programs with LDC institutions, and (d) support for specialized nondegree professional training on topics such as project planning and evaluation and rural development administration.

4. Communicate with LDC government officials and university administrators on the planning for postgraduate training-applied research programs and the need for a long-term commitment and realistic incentives to retain a highly qualified university professional staff.

5. Communicate with administrators in MDC universities on the anticipated future demands for training of professional agricultural economists to work on LDC problems and the need to modify existing programs so as to be more relevant to the problems in rural change in the LDCs. Periodic assessments of training similar to that currently being done by the American Agricultural Economics Association are recommended.

Supplementary Reference

Green, D. A. G. and H.-U. Thimm. "Report on the African Seminar on Postgraduate Training in Agricultural Economics, Nairobi, Kenya, 22 July - 4 August, 1976." Report prepared for presentation at the Fiftieth Anniversary Conference of the International Association of Agricultural Economists (Discussion Group No. 28), Banff, Alberta, Canada, 3 - 12 September, 1979. Aberystwyth, The University College of Wales, Department of Agricultural Economics, August 1979.

Rapporteur: D. A. G. Green
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U.K.

8th October 1979

APPENDIX Q

SURVEY OF U.S. GRADUATE TRAINING FOR FOREIGN PROFESSIONALS
IN THE ECONOMICS OF AGRICULTURAL DEVELOPMENT*

American Agricultural Economics Association

1) Name_____

2) Current Address_____

_____

3) Year of Birth_____ Country of Citizenship_____

4) University Education (include home country)

Name of University	Dates Attended Mo./Yr. - Mo./Yr.	Major Area of Study	Degree Received	Year
	-			
	-			
	-			
	-			

5) Principal Sources of Financial Support During U.S. Graduate Study (include salary and support costs)

Source	Approximate Percent for: M.S. Study	Ph.D. Study
Home country government agency and/or university		
Your own private funds or loan to repay		
U.S. government agencies (AID, Fulbright, etc.)		
U.S. foundations and other nonprofit agencies (Ford, Rockefeller, ADC, etc.)		
U.S. universities		
Intergovernment agencies (IBRD, FAO, OAS, etc.)		
Other (specify)_____		
TOTAL	100	100

6) What position did you hold when you first left your country to do graduate work in the United States?_____

7) Did you have a specific commitment to return to your home country when you finished graduate studies? Yes_____ No_____ Explain briefly_____

_____

*Individual responses to this questionnaire will be kept confidential. All data collected will be aggregated and used to evaluate U.S. graduate training in agricultural economics and ways to improve it in terms of LDC training needs and professional development.

8) Employment History Since Completing Your Graduate Study in the United States (list in chronological order). (If you hold, or have held, more than one job at the same time, please list each separately.)

	Dates Mo./Yr. - Mo./Yr.	Employer	Your Title or Position	For each position, indicate approximate percent of time spent in: Research	Teaching	Administration	Extension	Consulting	Other
a.	____ - ____								
b.	____ - ____								
c.	____ - ____								
d.	____ - ____								
e.	____ - ____								
f.	____ - ____								
g.	____ - ____								
h.	____ - ____								

9) Please indicate your professional employment goals in order of preference at the time you were studying in the United States.

___ university professor
___ researcher in government agency
___ private business and/or consultant
___ agricultural planning/project analyst in government agency
___ agricultural extension
___ university administration
___ government administration
___ professional in international development agency
___ other (please indicate)_____

10) The following is a list of course areas in which many agricultural economists study. In your case, please complete columns 2-7 in the following rating schedule by placing a check mark in the place that most clearly reflects your opinion today about the courses you took in graduate school abroad. Also, please provide the information requested in column (1).

	(1) Approx. No. of Courses Taken	(2) Extremely Useful	(3) Very Useful	(4) Moderately Useful	(5) Slightly Useful	(6) Waste of Time	(7) Cannot Tell
Microeconomic theory							
Macroeconomic theory							
Statistics and Econometrics							
Linear programming and operations research							
Mathematics							
Agricultural development and development economics							
Agricultural policy							
Trade and trade policy							
Agricultural marketing							
Production economics							
Land and resource economics							
Agribusiness studies							
History of economic thought							
Comparative economics systems							
Others:							

11) For each of the above areas of study in which you check "slightly useful" or "waste of time," please put a circle around the check mark if you think the problem was mainly because of poor teaching.

12) What additional courses or areas of study (if any) do you now wish you had emphasized in your U.S. graduate work?

_____

_____

Why? _____

_____

13) Do you feel you had adequate guidance in course selection and development of your U.S. graduate program?

Yes_____ No_____ Explain:_____

_____

_____

_____

14) Was English a serious problem in your U.S. graduate study? Yes_____ No_____

If yes, for how long after you arrived?

_____ one academic term _____ one year

_____ six months _____ two years

Please indicate which of the following you recommend for studying English:

_____ learn before coming to U.S.

_____ spend two to three months in an intensive U.S. English program before classes start.

_____ take English courses and limited academic load during first academic term

15) Please check if you wrote an M.S._____ and/or Ph.D._____ thesis.

a. If you wrote an M.S. thesis in the U.S., was this experience (more_____, less_____, or equally_____) useful to your professional career as your formal course work?

Explain:_____

_____

b. If you started a Ph.D. thesis but did not complete it, please indicate why not.

_____

_____

c. If you wrote a Ph.D. thesis, please indicate which of the following best describes your research.

_____ Home country problem with research conducted in your own country.

_____ Home country problem with most of research conducted in the U.S.

_____ U.S. or other problem with research carried out in U.S.

_____ Other (describe)_____

_____

d. Please indicate the main advantages and/or disadvantages of the approach you used for your Ph.D. thesis research.

Advantages:_____

_____

_____

Disadvantages:_____

_____

_____

e. What would you consider an optimum arrangement for an LDC student conducting Ph.D. thesis research?

_____

_____

_____

16) Please indicate what value your U.S. training has had on your career development.

_____ extremely useful

_____ moderately useful

_____ slightly useful

_____ no effect

_____ negative effect

Explain briefly:_____

_____

_____

_____

17) In terms of developing the agricultural economics profession in your country over the next 5 to 10 years, please rank the following types of training most needed in order of importance.

a. _____ Basic university degree in economics applied to agriculture.

b. _____ Master's level training in agricultural economics.

c. _____ Ph.D. training in economics of agriculture and development.

d. _____ Nondegree training in research techniques, project evaluation, systems analysis, etc.

e. _____ Other (specify)_____

_____

_____

18) Which of the above types of training is now available on an internationally acceptable level in your own country?

_____

a. Which of the above can reasonably be developed to international standards within the next 5 to 10 years?

_____

b. What are the most critical inputs needed to provide the type of training indicated above?

_____

_____

19) What are areas and/or problems in which collaboration with U.S. agricultural economists would be most useful in strengthening the agricultural economics profession in your country?

_____

_____

_____

_____

_____

20) What advice would you give a young professional in your country today who wants to study for an M.S. in the economics of agricultural development?

a. Study in own country or region? _____

Which institution?_____

Why study in region?_____

_____

_____

b. Study abroad? _____

Where?_____

Why study abroad?_____

_____

_____

21) What advice would you give to a young professional in your country who wants to study for a Ph.D. in terms of:

a. Where to study_ _____

_____

_____

b. What courses or areas to emphasize in study program_____

_____

_____

c. Doing Ph.D. thesis in own country_____

_____

_____

d. Importance of having a Ph.D. to work effectively in own country_____

_____

_____

_____

22) Have you participated in any special nondegree training programs over the past five years? Yes_____ No_____

If yes, please complete the following:

Type of Program	Dates Attended	Sponsoring Agency

23) In terms of your professional goals in the next five years, what additional skills, training, professional experience, etc., do you feel you need?

_____

_____

_____

24) Is this type of training or experience available in your own country?

Yes_____ No_____ If not, where can you get it? _____

In what form should this further education or training be implemented? (Seminars, formal graduate courses, intensive short courses, actual experience, bring foreign visiting specialists, etc.?)

_____

_____

_____

25) What length of time do you feel is needed for this training? _____

26) What problems or constraints do you face in getting the training indicated?

_____don't know where it is available _____can't get leave of absence

_____lack of financial support _____family constraints

_____other (specify) _____

_____

Please return this questionnaire to: Dr. Darrell F. Fienup, Director
AAEA Training Study
Dept. of Agricultural Economics
Michigan State University
East Lansing, MI 48824

APPENDIX B

SURVEY OF U.S. PROFESSIONALS INTERESTED
IN THE ECONOMICS OF AGRICULTURAL DEVELOPMENT*

American Agricultural Economics Association

1) Name_____

2) Current Address_____

_____

3) Year of Birth_____ Married, Yes_____ No_____

4a) University Education

Institution	Dates Attended Mo/Yr -- Mo/Yr	Major Areas of Study	Degree Received	Year

4b) What was your area of specialization for the Ph.D.? (farm management, marketing, development, etc.) _____

5a) Foreign Language Capability (current)

Language	Speak			Read			Write		
	poor	fair	fluent	poor	fair	fluent	poor	fair	fluent
_____	___	___	___	___	___	___	___	___	___
_____	___	___	___	___	___	___	___	___	___
_____	___	___	___	___	___	___	___	___	___
_____	___	___	___	___	___	___	___	___	___

5b) Was your language capability acquired mainly:

_____before, or

_____after completion of your Ph.D. studies?

6) Please indicate your professional employment goals in order of preference at the time you were studying for your Ph.D.

___ university teaching and research

___ researcher in government agency

___ private business and/or consultant

___ agricultural planning/project analyst in government agency

___ agricultural extension

___ university administration

___ government administration

___ professional in international development agency

___ Other (please indicate) _____

* Individual responses to this questionnaire will be kept confidential. All data collected will be aggregated and used to evaluate U.S. graduate training in agricultural economics and ways to improve it in terms of training needs of LDC students and U.S. citizens interested in development work.

7) Employment history since completing your doctorate. List in chronological order. If you hold, or have held, more than one job at the same time, please list each separately.

For each position indicate approximate percent of time spent in these activities.

For each position indicate approximate percent of time spent on issues in these two areas.

Mo/yr-mo/yr / Employer / Location of work / Title or Position	Research	+	Teaching	+	Administration	+	Extension	+	Consulting	= (total) %	Inter'l issues	+	Domestic issues	= (total) %
		+		+		+		+		= 100		+		= 100
Mo/yr-Mo/yr / Employer / Location of work / Title or Position		+		+		+		+		= 100		+		= 100
Mo/yr--Mo/yr / Employer / Location of work / Title or Position		+		+		+		+		= 100		+		= 100
Mo/yr--Mo/yr / Employer / Location of work / Title or Position		+		+		+		+		= 100		+		= 100
Mo/yr--Mo/yr / Employer / Location of work / Title or Position		+		+		+		+		= 100		+		= 100
Mo/yr--Mo/yr / Employer / Location of work / Title or Position		+		+		+		+		= 100		+		= 100

8a) The following is a list of graduate course areas in which many agricultural economists study. In your case, please complete columns 2 through 7 in the following rating schedule by placing a check mark in the place that most clearly reflects your opinion today about how useful the courses listed were in terms of preparing you for work in international agricultural development. Also, please provide the information requested in column (1).

Graduate Courses	(1) Approx. No. of courses taken	(2) Extremely Useful	(3) Very useful	(4) Moderately useful	(5) Slightly Useful	(6) Waste of Time	(7) Cannot Tell
Microeconomic Theory							
Macroeconomic Theory							
Statistics and Econometrics							
Linear programming and operations research							
Mathematics							
Agricultural development and development economics							
Agricultural policy							
Trade and trade policy							
Agricultural marketing							
Production economics							
Land and resource Economics							
Agribusiness studies							
History of economic thought							
Comparative economics systems							
Sector and project analysis							
Others:							

8b) For each of the above areas of study in which you check "slightly useful" or "waste of time," please put a circle around the check mark if you think the problem was mainly because of poor teaching.

9) What was the source of your initial interest in the field of development? (Check as many as appropriate)

___ Peace Corps experience
___ University courses
___ Good job prospects
___ Interesting and important work
___ Availability of fellowship or assistantship
___ Influence of professors
___ Influence of peers
___ Lived abroad with parents
___ Missionary background
___ Other influence, explain _____

10) Which aspects of your training and/or work experience do you feel have been most useful in developing your current capabilities to work in development? (Check as many as appropriate)

___ Formal courses taken
___ Thesis research
___ Courses taught
___ Research projects after Ph.D.
___ Overseas assignment
___ Domestic work experience that is applicable to development work
___ Other _____

11) In what areas of development do you feel most qualified to work? (List all in order of importance)

___ Farm management, production economics and farming systems
___ Marketing in development
___ Land tenure and farm organization
___ Rural and/or community development
___ Agricultural planning and sector analysis
___ Credit and input problems
___ International trade and monetary policy
___ Agricultural and rural development policy
___ Administration of development (design, implementation, evaluation)
___ None, have been away from it too long
___ Other _____

12) Do you feel you have been able to pursue your career interests successfully in development since completing your Ph.D.? Yes___ No ___

Explain _____

_____

_____

_____

13) If you are no longer working in development, do you feel that the development oriented training has hindered your career? Yes___ No___

Explain _____

_____

_____

14) Would you like to increase your current involvement in development activities?
Yes____ No____

If yes, please indicate those activities that most interest you in order of importance

___ Joint research with LDC colleagues overseas
___ Advising LDC students on their research
___ Preparation and monitoring of development projects
___ Teaching graduate courses in development
___ Teaching undergraduate courses in development
___ Overseas technical assistance (one to three months assignment)
___ Overseas technical assistance (one to two years)
___ Short term consulting
___ Organization and participation in international conferences and seminars

15) In order of importance, please indicate in which areas of the developing world

	(a) you have most experience and knowledge	(b) you would like to expand your international activities
Central America and Caribbean	_____	_____
South America	_____	_____
Middle East	_____	_____
North Africa	_____	_____
East Africa	_____	_____
West Africa	_____	_____
South and SE Asia	_____	_____
East Asia	_____	_____
Other	_____	_____

16) In terms of the near future, do you see opportunities for agricultural economists working in development

___ Growing?
___ Remaining about the same?
___ Diminishing?

Why?_____

_____

What about your own opportunities? _____

_____

_____

17) What percentage of U.S. Ph.D.'s who prepared to do work in development would you say are actually working in that field today?

_____%

18) Do you feel that young U.S. professionals in agricultural economics are deserting their interests in development? Yes___ No___

If yes, why?

___ Few jobs available in tenure stream
___ No support from Agricultural Economics Departments
___ Little if any research money is being made available
___ Poor promotion or advancement opportunities
___ Low salaries
___ Frustrating nature of development work
___ Too much traveling and moving around
___ Growing unpopularity of the U.S.A. in LDC's
___ Family reasons
___ Other _____

In what kinds of activities can U.S. professional agricultural economists be most productive in international development work? (Rank in order of importance.)

___ Teaching and advising foreign students in foreign universities
___ Teaching and advising foreign students in U.S. universities
___ Research on LDC problems from a U.S. base
___ Research and technical assistance work overseas in a local government institution
___ Research and technical assistance work overseas in a technical assistance agency

20) In your opinion, what are LDC's greatest needs in terms of the development of their agriculture? (Rank top four in order of priority.)

___ More technical assistance overseas by U.S. professionals
___ More indigeneous capabilities in agricultural economics
___ Development of appropriate technology
___ Better extension programs
___ More governmental support for agricultural development
___ Domestic political stability
___ Better research facilities
___ Development of physical infrastructure
___ More trained nationals in agricultural sciences
___ Improvements in foreign trade markets
___ Better marketing institutions including more effective cooperatives
___ More internal management capabilities
___ Planning and policy analysis
___ Other

21) What can international development agencies (AID, World Bank, Foundations, etc.) do to increase the participation and involvement of young professionals like yourself in international development work? _____

_____

_____

22) What are the most important things a U.S. university can do to strengthen its contribution to international agricultural development, including a better accommodation of students who are interested in development?

___ Encourage more exchange of students and faculty between the U.S. and LDC's
___ Offer more courses on topics of development
___ Provide more research opportunities in development fields
___ Integrate the topic of development into already existing courses
___ Offer informal seminars and invite guest lecturers to speak on the topic of development
___ Create professorships in international agriculture
___ Other _____

23) If you have further comments or suggestions regarding the role, problems, and/or opportunities for U.S. professionals working in development, please indicate below.

_____

_____

_____

_____

_____

_____

_____

_____

24) Please check if you would like a copy of the final report.